LAST MINUTE
OIL NEWS SECTION

News By Teletype from 4 News Bureaus

National Petroleum News

News From Oil Industry Everywhere

VOLUME 29 WEDNESDAY, AUGUST 11, 1937 NUMBER 32

A 36-Hour Week In Oil Industry Sought by C.I.O.

N. P. N. News Bureau

WASHINGTON, Aug. 9. — When the wage-and-hour bill comes up in the House an attempt will be made to amend it to authorize the proposed labor standards board to set a maximum work-week of 36 hours for the oil industry, according to Harvey C. Fremming, president of the C.I.O. oil workers' union.

The labor board, as the bill passed the Senate, cannot shorten the work-week for any industry to less than 40 hours nor increase the minimum hourly pay to more than 40 cents.

If the oil union's amendment is included in the bill as it becomes law, Fremming said he would immediately ask them to set a 36-hour week for the production, refining and pipeline branches.

For marketing, Fremming proposes to ask a 40-hour week for employes at bulk plants and a 48-hour week at filling stations.

After Chisellers

"We are not interested in the board's powers to set minimum wage rates—there haven't been any 40-cent wages in the oil industry for years," Fremming declared.

"Only 10 per cent of the oil industry's employers are now working their employes longer hours than the maximums we are proposing," he added. "It is only this small group of chisellers we are after. They are chisellers because they not only work their employes long hours, but this gives them an unfair advantage over their more ethical competitors. We believe the 90 per cent of employers who are observing the maximum work weeks we are proposing will back us up, because fair working conditions are reflected in fair trade practices."

Fremming singled out three "secondary integrated companies" in the Midcontinent area as the "chisellers" who are working their employes more than 36 hours a week in production, refining and pipeline operations.

He expressed the fear, how-

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Out Where Men 'r Men Words Is 'Language'

CLEVELAND, Aug. 9.—For oil men interested in road oils and asphalts, the Third Annual Montana Bituminous Conference, at Many Glacier Hotel, Glacier National Park, Mont., is announced for Sept. 7-9, by D. A. McKinnon, Montana State Highway Engineer, in the following manner:

"We hereby deal you a hand and invite you to sit in. The occasion will be a combination of the erudite and festive. Days will be devoted to omniscient conclaves wherein nationally recognized sages will delve into the mysteries of bitumen and tell all; nights will offer informal entertainment exemplifying western hospitality.

"You will not only have an opportunity to profit from the scientific research and experience of experts, but you can sojourn in the nation's most sublime and spectacular recreational area at special conference rates."

Action A'Plenty Under New Michigan Fair Trade Statute

By JOHN W. THOMPSON

DETROIT, Aug. 10.—Although Michigan's fair trade practice law is little more than two weeks old, events in its administration have clicked off in rapid succession.

Five Detroit gasoline dealers, charged with violation of the new law, were served with warrants, arraigned, and then released after pleading ignorance of the law, in three days' time.

County Prosecutor Duncan C. McCrea threatens a grand jury investigation of local oil marketing conditions, stating that some "curious things" are being dug up in the investigation he is conducting.

Four gasoline retailers have openly thumbed their noses at the new law by advertising their return to a discount policy which is said to directly violate the law's provisions.

The new law, which went into effect July 23, and which was sponsored by the Retail Gasoline Dealers Assn. of Michigan, Inc., makes unlawful the practice of rebating, discounting, offering premiums, and selling a particular brand of product at different prices in the same community. Violations of the law are punishable by a fine or imprisonment, or both.

On Aug. 7 the law first showed its teeth, when Judge John P. Scallen, of the municipal Recorder's Court, issued two warrants for the arrest of five station operators who head two service station companies. The specific charge was that identical brands of gasoline were being sold at different prices by the same company in its different stations.

This price discrimination, according to the warrants, was with "intent to destroy the business of a competitor." According to the warrant the stations were selling the same brand for 16.5 cents at one location, and at 18.5 cents at another point.

One warrant named Charles Burns, Arthur Burns, Joseph Magid and the Burns Service, Inc., which operates two Detroit stations. The other warrant names Lyman Bertrand and Joseph E. Thomas, who operate two Detroit stations.

The accused operators were arraigned before Prosecutor McCrea on Aug. 9 and 10, and were released following their pleas that they were unfamiliar with the new law. McCrea indicated that they had committed a tech-

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Fire At East Chicago

CHICAGO, Aug. 9. — Fire at Sinclair Refining Co's. East Chicago refinery last week injured eight employes and destroyed 20 gasoline tank cars.

The fire is believed to have started when a storage tank overflowed.

Kentucky's Truck Weight Law Is Attacked In Federal Court

N. P. N. News Bureau

WASHINGTON, Aug. 9.— American Trucking Ass'ns., Inc., has renewed its drive against discriminatory truck regulations by filing in federal district court at Frankfort, Ky., a suit for a permanent injunction against enforcement of Kentucky's restrictive 18,000-pound gross weight law.

The Kentucky suit is simllar to the one in which the trucking association was successful in outlawing the 20,000-pound maximum weight law of South Carolina six months or more ago. In preparing the Kentucky case, the association was aided by the Motor Truck Club of Kentucky.

The effect of this law and the possibility of its being thrown overboard, are as vital to the oil trucking industry as was the outlawing of the South Carolina law. Kentucky, as was pointed out in the ATA brief, lies across the natural channels of interstate commerce between the mid-west and the south, and between the southwest and the east.

This law, the bill of complaint charges, "erects an arbitrary and unnecessary barrier" to interstate commerce by truck.

Objections Set Forth

Other contentions in the bill are that the law defeats the purposes of federal-aid highway construction, defeats and subverts the administration and purposes of the federal motor carrier act, and that it has been superseded by that act, insofar as it applies to common and contract truckers in interstate commerce.

Kentucky federal-aid highways are designed to carry gross loads of 16,000 pounds per axle (24,000 pounds maximum for a single truck; 40,000 pounds for a six-wheel job), without undue hazard or damage, the bill avers, adding that, while the law at-

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Profits Tax Is "Stop" Order For Small Jobbing Companies

By A. M. PETTY
N. P. N. News Bureau

WASHINGTON, Aug. 9.—Most of the 500,000 corporations in the U. S. today are not million-dollar companies, but small concerns like the local oil company, ice plant or lumberyard, including many neighborhood merchants such as the corner drug store, grocery or filling station.

These are what have been called the "malefactors of great wealth" who have been caught in the net of the corporate surplus tax and forced to disgorge their huge profits.

Congress may have deluded itself that it was aiming a body blow at Big Business when, under orders from the White House, it levied a heavy surtax on undistributed profits; but it was really striking at the small businessman who has chosen to operate under the corporate form.

One nationally-known leader of Independent oil jobbers has declared flatly this surtax was devised by some of the "brain trusters" at Washington to wipe out the small company and benefit the "monopoly groups."

Little Fellows Complain

Whatever may have been the motives behind this tax proposal, it has become increasingly clear that it hurts the big, strong corporation least.

This is borne out by one of Congress' own committees, the Joint Committee on Internal Revenue Taxation, which has been flooded with complaints about the undistributed profits tax. These complaints, according to L. H. Parker, chief of the committee's staff, almost uniformly are from small corporations.

By imposing, on top of the normal corporation income taxes, a surtax ranging up to 27 per cent on undistributed earnings, the 1936 revenue law has pyramided the disadvantages under which small units in all industries, particularly the oil industry, must labor in competing with corporations a thousand times their size.

Typical Oil Case

Here is a summarized account of how the undistributed profits tax has affected a comparatively small company in the oil business in a midwestern state:

This is a new company, ambitious to grow but not in a position to sell its stocks or bonds in the capital market. If it retains earnings needed to set aside reserves and to expand, it must pay the surtax.

To pay the heavy surtax would immediately place this company in an adverse competitive condition, as the larger and better-financed units in the industry are able to avoid or lessen the tax by distributing their corporate earnings.

Business prospects of this company appear to be good, but it needs capital.

Weakens Its Credit

If it pays out its earnings, it escapes the surtax. However, this would not only deprive the company of its potential capital from this source, but it would also weaken its credit position, which, in turn, curtails its borrowing power. Moreover, if any debt is incurred, the penalty tax applies to current earnings which are later used towards its retirement.

So far this company has been unable to devise any practical plan of escaping the surtax.

It is a discouraging prospect this company faces. There is but little choice except to abandon any ambition to expand and concentrate on holding what business it now has. There is also the possibility some of its larger competitors may expand their operations into the field this company had hoped to cover and then move in to gobble up the present business of the smaller company.

Dilemma

In a nutshell, that is the dilemma faced by hundreds of small units in the oil industry.

Expansion is the life blood of a small, growing company. It is usually well content ordinarily to plow back its profits into the business; but it must pay heavily for this privilege now. A corporation desiring to spend its earnings on needed plant improvements must pay a surtax of 27 per cent of its undistributed net income, which may be in excess of 60 per cent of its adjusted net income.

Take a look at how this works out in practice.

An Independent oil jobber feels compelled to modernize one of his stations to offset a big, expensive superservice station erected on the opposite corner by one of his major-company competitors.

The jobber's company stands to earn $25,000 for the year, but it is going to cost him just that amount to modernize the station and hold his trade. To retain that $25,000—plow it back into the business—the jobber will be forced to pay a surtax of $6750.

But the major oil company building the deluxe station across the street, distributes all its earnings for the current year, and draws on its surplus built up in previous years to carry out its expansion plans. The surtax does not apply to surpluses piled up prior to 1936, so the major company escapes paying the surtax.

The jobber, on the other hand, has to go to the bank and borrow $6750 to pay the surtax. Next year when he goes to pay off the loan he will have to pay a surtax on the portion of his earnings used to repay the loan.

Of course, the jobber could have paid out the $25,000 in dividends and borrowed the money from the bank to modernize the station. But how does he know that he will make any money next year to pay off or curtail the note; and if he does, will his profits be enough to pay the loan and surtax, also?

Jobber Can't Buy Lot

Recently, a Virginia jobber was offered an attractive site for a filling station. He told the owner that, while the property was worth his asking price of $9000, it was not worth the $12,000 which it would cost him—the jobber—after paying the surtax for the "privilege" of taking the $9000 out of current earnings.

Another jobber, in North Carolina, feels that the undistributed profits tax was the last straw. He says he is now paying out 51 per cent of his company's earnings in federal and state taxes.

"It's hard enough nowadays to make money at all," he remarked dryly, "but when 51 cents is taken out of each dollar of your profits for taxes—well, it looks like I am not working for myself but for the government, or rather I'm working to support some of these WPA relief 'workers' around here."

Not on Ability To Pay

One of the anomolous features of the undistributed profits tax is that it violates one of the avowed principles of the New Deal—taxation must be based on ability to pay.

The surtax on undistributed earnings is not based on ability to pay but ability to distribute earnings. Big corporations, with huge surpluses on hand, can pay out all of their current earnings and escape paying the surtax entirely. But the small corporation, with no surplus on hand to use for working capital, must pay heavily because its management prudently deems it unwise to distribute all its earnings.

And why hasn't the small corporation a surplus on hand? In many cases because it was used to keep the company going and paying wages to employes during the depression years, when profits were unheard of and operations were deep in the red.

Surplus Was Lifesaver

In sponsoring the undistributed profits tax, the Roosevelt Administration seems to have lost sight completely of the fact that surpluses built up in good years was all that pulled many corporations through the depression.

The sweeping character of this surtax has aroused the most criticism, penalizing heavily as it does the use of current earnings to pay off debts, make needed improvements and expand plant facilities, or lay aside any reserve for a rainy day.

Dozen Bills Pending

Most of the dozen or more bills pending in Congress to amend the undistributed profits tax are aimed at providing relief for the company desiring to plow back into the business at least some of its earnings.

All sorts of conflicts with state and federal laws result from this surtax, it has been pointed out by Congressman Emanuel Celler, New York, author of a bill to remedy the "major imperfections" of the tax. He said;

"Many states have laws which prohibit the payment of dividends when capital is impaired and which also require corporate reserves to be set aside under certain conditions. Yet the federal government forces such corporations to declare dividends or pay a tax for the

Oil Ass'ns. Condemn Tax

CLEVELAND, Aug. 9.—Resolutions seeking the repeal or amendment of the federal tax on undistributed profits are now before Congress from six oil associations. They condemn the tax because of its harmful effects on the businesses of independent marketers. The associations are:

Virginia Petroleum Jobbers Ass'n.

Virginia Oil Mens Ass'n.

South Carolina Oil Jobbers Ass'n.

Indiana Independent Petroleum Ass'n.

Oil Men's Ass'n. of New England, Inc.

United Terminals Ass'n. of New York.

privilege, or rather duty, of living up to the state law."

Another iniquitable feature of the undistributed profits tax is the requirement that, in order to receive credit, distribution of dividends must be made before the end of the taxable year when it is obviously impossible at the time for the corporation to determine accurately how much profit it will show for the year. No matter which way the company errs estimating its profits too high or too low it will catch it in the neck.

Still another source of worry for the taxpayer is the wide difference between what he regards as "income" and the definition of the same by the Internal Revenue Bureau.

The taxpayer might be able to figure his "profit" for the year but, when he comes to pay out dividends, he may well find it is all tied up in inventories, accounts receivable (some of them highly doubtful), equipment and other non-cash assets.

He can give the stockholders notes as dividends, which means the stockholders will have to pay an income tax on the notes even though they are worth comparatively little in the open market.

But the tax collector is a merciless leech; he will demand his cut in cash, even if the taxpayer has to deliver his body and soul to the bankers to get it.

War Over Referendum Petitions Looms

N. P. N. News Bureau

LOS ANGELES, Aug. 9. — Referendum petitions were being circulated in California today by opposing political factions against both the O'Donnell and Olson tideland development laws, although the Olson law was passed as an emergency measure and not subject to referendum.

Observers here said the strategy of O'Donnell partisans was to throw the matter before the courts and stop leasing under the Olson measure until settlement of the issue. The O'Donnell measure, on the other hand, scheduled to become effective Aug. 27 and supersede the Olson law, will be stopped if 116,487 registered voters sign the referendum petition before that date.

The measures provide for development of state-owned tidelands in the Huntington Beach field. The Olson measure permits drilling from piers or groins built out over the water, while the O'Donnell law provides that a state oil and gas commission would decide the method of drilling the offshore pool.

Costs Shown In Fair Trade Case

LINCOLN, Aug. 9.—The first case under Nebraska's new unfair trade practice law involving charges of selling gasoline at retail below cost was bound over to district court in a recent "muny" court hearing.

Jack Coons, Lincoln dealer, is charged with selling gasoline "below cost" on June 16. Bond was set at $500.

Municipal Judge John L. Polk declined to act on the objection of Coons' attorney on the constitutionality of the law and bound the case to district court. The judge explained it was not within his jurisdiction to assess a minimum $100 penalty in a "high class" misdemeanor case of this type.

Only witness at the municipal court hearing was Frank S. Henline, executive secretary of the Lancaster Assn. of Petroleum Retailers, who claimed a survey of retailer's costs showed a product cost of 13.97 cents and an overhead of 3.75 cents per gallon.

Costs Introduced

Henline's testimony also brought out that the defendant had previously said his cost was 12.55 cents a gallon and that a retailer could do business on a 3.5 to 4 cents gross profit, although Mr. Coons had acknowledged a gross profit of only 1.95 cents a gallon.

Complaint was made to the county attorney June 17 by the retailers' association. The complaint, signed by the county attorney, charged Coons with selling third grade gasoline June 16 at 14.5 cents. Retail price posted by dealers on June 16 was 15.5 cents, and the suppliers' price to dealers was 13.5 cents.

Nebraska's unicameral legislature enacted the law, LB 137, making it an unfair trade practice to sell below cost. In the case of retail prices the law establishes a formula of cost of merchandise plus a minimum 6 per cent mark-up, unless the retailer can prove a lower overhead.

While the law was supported by druggists and general retail merchants, the first case brought under the act involves gasoline. The retailers' association hopes the case will be carried to the state supreme court for a final verdict on the validity of the law in its application to oil industry prices.

Trial Hearing Set

LOS ANGELES, Aug. 11.—A preliminary hearing in trial of Howard Cook, Ocean Park (Calif.) service station proprietor, on charges of selling gasoline below price stipulated by the supplier has been set for Sept. 7. Cook was charged in a test injunction suit brought by Retail Petroleum Dealers Assn. under the California Fair Trade Act.

Meanwhile a special master was appointed by Los Angeles Superior Court to examine books and records of ten defendant service station operators charged with selling gasoline below cost in violation of California Unfair Practices Act. This litigation was also backed by the retail dealers association and is expected to come to trial about Sept. 1.

Says 60,000 Joined Oil Union in a Year

N. P. N. News Bureau

WASHINGTON, Aug. 10.—Sixty thousand members were added to the rolls of the International Assn. of Oil Field, Gas Well and Refinery Workers of America between May 1, 1936, and June 1, 1937, according to Harvey C. Fremming, president.

"These are the latest figures available," Fremming said, "and include only actual paid-up members. Besides these, we have thousands of signed pledge cards. Our membership passed 100,000 many months ago."

Fremming said his union is opening New York headquarters this week from which will be conducted the campaign to organize workers in service stations, bulk plants, and others in the marketing branch of the oil industry. The New York office is in the same building, at 1133 Broadway, as the C. I. O. headquarters, Fremming said, but is not connected with it.

Organization work in all five boroughs of greater New York will be coordinated at the new Manhattan office, Fremming said. The campaign for organization of marketing employes in the New York area has been going on for some time, and the new office means only that it will be consolidated in a New York headquarters.

While the oil workers' union is affiliated with John L. Lewis' Committee for Industrial Organization, its organization drive has not resulted in the sensational headlines that have followed the C. I. O. campaigns in the steel, automobile and other mass production industries.

New Field Seen As Well Flows 8180 Bbls. Daily

FORT WORTH, Aug. 7. — Gulf Oil Corp.'s second deep well in the Sand Hills pool, western Crane County, Texas, has been given potential rating of 8,179.44 barrels daily on the basis of the last four hours of a six-hour flow. Its total depth is 5971 feet and pay is in the Ellenberger lime, Ordovician age, top of which was found at 5956 feet.

This is a much better well than was the deep pay discovery which was drilled in last April for initial production of 1885 barrels, total depth of 6014 feet. The second well, No. 5 Waddell, located 1980 feet from the south and east lines of Sec. 4, Block B-27, PSL survey, is about one-fourth mile south and slightly east of the discovery. The other test drilling to the deep pay is Sinclair Prairie Oil Co. and others' No. 2 Tubb Unit, 1800 feet east of the Gulf's second well.

Maybe Major Field

The pay here is the approximate equivalent of the Simpson formation of Oklahoma, source of much of the state's production. While further testing will be required to establish the dimensions of the deep pay in Sand Hills, belief of many is that a major field is in the making. The oil is approximately 45° A. P. I. gravity, sulfur free, in contrast to the Permian lime pay production of shallower fields of West Texas including the Sand Hills field in which the deeper pay is being developed.

T. W. Prices Advance In 3 More States

CHICAGO, Aug. 9. — Subnormal tank wagon prices to consumers on third grade gasoline, kerosine and tractor fuel were advanced to normal today by Standard Oil Co. of Indiana in Indiana, Illinois and eastern Missouri, with some exceptions.

There was no change in dealer prices on second and third grade gasolines.

A week ago Indiana Standard made similar advances, with some exceptions, at sub-normal points in Minnesota, Iowa, Wisconsin, and North and South Dakotas.

Drilling Cost Is 40% of Return, Report Shows; 1 Well in 5 is Dry

By LAWRENCE E. SMITH
N. P. N. News Bureau

TULSA, Aug. 7.—The significance of prospecting and development of oil and gas in the economy of a state is shown clearly in a compilation of drilling records issued by the Arkansas Geological Survey.

Dr. George C. Branner, state geologist with the Survey, prepared the report with the assistance of WPA personnel.

State records and files of oil companies were consulted for the data on 2109 oil and gas wells and dry holes drilled to Oct. 31, 1936. The intent was to cover particularly wildcats and key wells, hence information on 6794 wells drilled in the pools of Union, Columbia, Ouachita and Nevada counties was omitted.

In his letter of transmittal to the governor, Dr. Branner summed up the economic conclusions drawn from the report as follows:

Conclusions

"It is of interest to consider the immense sums which have been expended for the drilling of oil and gas wells and dry holes in Arkansas. According to our records, the total number of wells drilled in the state to Dec. 31, 1936, inclusive, is 8909. Assuming the average cost of drilling rotary wells in the lowland region of southern and eastern Arkansas during the period prior to 1937 to be $21,000, and the average cost of drilling cable tool wells in the highland area of western Arkansas during that period to be $11,000, the total amount expended for drilling is $181,659,000.

"The estimated value of all products extracted to Dec. 31, 1936, (429,084,291 barrels of petroleum, 340,221,456 M cubic feet of natural gas, and 321,828,955 gallons of natural gasoline) is $460,801,189. The amount spent for drilling the 8909 wells referred to is, therefore, 39.4 per cent of the total value of the products extracted, or, otherwise stated, the value of the products is 2.53 times the drilling cost.

"The cost of drilling the 6874 producing wells exclusively is $141,544,000. In this case, the cost of drilling is 30.7 per cent of the value of the products extracted, or otherwise stated, the value of the products is 3.25 times the drilling cost.

"It therefore follows that if all the oil and gas wells and dry holes are considered, $2.53 has been returned for each dollar expended for drilling. If only producing wells are considered, $3.25 has been returned for each dollar so expended. The excess of the value of the products extracted over drilling cost for each dollar expended has been, therefore, $1.53 for all wells and $2.25 for producing wells. In the producing areas, this $2.25 must pay the cost of leasing, royalties, pumping, labor, taxes, administration and other overhead.

"It becomes apparent, therefore, that the net profit which has accrued to the oil and gas producing industry in the proven fields to Dec. 31, 1937, has not been great. This, of course, does not mean that many individuals and companies have not made a great deal of money from the sale of Arkansas oil and gas, but it does indicate the average risk in prospecting.

"The above figures do not take into consideration the value of extracted products which has accrued, or which will accrue, after Dec. 31, 1936. Exclusive of the Shuler area, which is not yet prospected, these values probably will not exceed 15 per cent of the accrued value to Dec. 31, 1936. The estimates given, therefore, will not be greatly affected by accruals after that date."

Percentage of Failures

The report, which contains numerous maps and graphs in addition to the long list of wells drilled—this tabulation gives locations and depths of such wells—furnishes the basis for calculations Dr. Branner has made as to percentage of failures drilled.

"In the lowland areas of southern and eastern Arkansas, 21.1 per cent of the tests drilled have been dry, while in the interior highland area of western Arkansas, 48.2 per cent of the tests drilled have been dry," he says. "Of the total tests drilled in the state, 22.8 per cent have been dry. These figures include the dry holes drilled in the proven areas.

"It is of interest to estimate the number of tests which it has been necessary to drill to discover the oil and gas producing areas in Arkansas. If we consider that part of southern Arkansas in which the character and structure of the formations is apparently most favorable for the accumulation of oil and gas in commercial quantities, and which includes some 5900 square miles in Miller, Lafayette, Columbia, Union and the southern portions of Little River, Hempstead, Nevada, Ouachita, Calhoun, Bradley and Ashley Counties, we find that, of 986 tests drilled in this area, outside of the proven fields, 19 have discovered producing fields.

Ratio 1-52

"Assuming that one well has been required to discover each field, the chance for the discovery of oil and gas in that area, up to the present time, has been as 19 is to 986, or as one is to 51.8. If we consider the 19 successful wells with reference to the total number of tests drilled in the Gulf Coastal Plain, including 27,620 square miles, we find that the chance for discovery in that area has been as 19 is to 1439, or as one is to 75.5."

In western Arkansas in the 7250 square miles considered most favorable for gas accumulation, it has taken 131 tests to find 15 gas fields.

Diesel Fuels and Lubes On A.S.M.E. Program

NEW YORK, Aug. 5.—Diesel engines and fuels and oil engine power costs will interest oil men attending the 10th national oil and gas power meeting of the American Society of Mechanical Engineers at Nittany Lion Inn, State College, Pa., Aug. 18 to 21. The meeting will be under the joint auspices of the oil and gas power division and the Central Pennsylvania Section of the society and of the school of engineering, Pennsylvania State College.

A fuels and lubrication session during the morning of Aug. 19, under the chairmanship of Carl Behn, National Supply Co. of Delaware, Otto Engine Division, will hear these papers:

Lubrication Problems in Connection with High-Speed Diesel Engines, by C. G. A. Rosen, Caterpillar Tractor Co.

Correlation of Laboratory Tests on Fuel Oils with Field Operation, by W. F. Joachim, U. S. Naval Experiment Station.

The afternoon session, on transportation, under the chairmanship of Harte Cooke, American Locomotive Co., will have this program:

Recent Developments in Automotive-Type Diesel Engines, by O. D. Treiber, Hercules Motors Corp.

Diesel-Electric Bus Operation, by Martin Schreiber, Public Service Coordinated Transport Co.

The operating session, at 9:30 A.M., Aug. 20, under the chairmanship of L. M. Goldsmith, The Atlantic Refining Co., has these papers scheduled:

1936 Oil Engine Power Cost Report, by H. C. Major, chairman, oil engine power cost subcommittee.

Sewerage Gas Engines, by W. B. Walraven, Springfield, Ill., Sanitary District.

Waste Heat Recovery from Diesel Engines, by Glenn C. Boyer, Burns & McDonnell Engineering Co.

Penn State Method of Testing Diesel Fuels, by J. S. Chandler, Pennsylvania State College.

The research session, Aug. 21, at 9:30 A.M., with Dr. P. H. Schweitzer, Penn State College, as chairman, will hear and discuss;

Oil Flow Through Fuel Nozzles, by Prof. K. J. DeJuhasz, Penn State College.

Polymerization of Fuel Oils, by Dr. Gustav Egloff, Universal Oil Products Co., Chicago.

The first day's activities will be devoted to registration, a general session on progress reports by various engine manufacturers, and a paper on U. S. Navy Contributions to Diesel Engine Development by E. C. Magdeburger, Bureau of Engineering, U. S. Navy Dept.

At this writing, presentation of the Trieber-Schreiber papers is not definite.

Pump Makers Will Meet Sept. 21 at Chicago

CHICAGO, Aug. 5. — The fourth anniversary meeting of the signing of the gasoline pump code will be held by the Gasoline Pump Manufacturers Assn. at Edgewater Beach Hotel, Sept. 21 and 22, according to a recent association bulletin.

The meeting will be in the nature of a get-together for the pump manufacturers who first met under the NRA code days. There will be a business program, but, according to the bulletin, "the spirit of the vacation season will be with the members" and they will find some of their troubles on the golf course at the Bob O'Link Country Club.

A banquet on the evening of the 22nd will close the meeting.

Oil Firms Move To Block Wage Plan in Mexico

N. P. N. News Bureau

NEW YORK, Aug. 9.—American and British oil companies in Mexico have protested a recommendation that workers wages be increased by amounts which would total $7,000,000, company officers said today.

The companies have asked time to file an answer with the Mexican labor board. The recommendation was made by a government investigating committee appointed two months ago at the end of a general strike of petroleum workers. At that time the oil companies had offered conditional wage increases of $2,750,000.

Other recommendations of the governments committee, include a 40-hour, 5-day week for workers, with pay for a 56-hour week; free life insurance and pensions and vacations with pay.

The investigating committee reported that foreign oil companies operating in Mexico averaged over 16 per cent profit in 1934 and 1935 whereas in the U. S. the companies made but 6.13 per cent profit. Prospects for rising prices are good for the coming years, the committee reported.

The oil companies contend that the committee's report was based on misleading information.

Committee Plans 12-State Meeting

BUFFALO, N. Y., Aug. 9. — The New York State Legislative Committee to investigate the oil industry will meet "early in September" with groups from 11 other states to discuss common interests, such as state grading of gasoline, control of prices and state licensing of oil marketing companies, according to Harold B. Ehrlich, chairman of the New York committee.

Ehrlich said that the various state groups were composed of legislative committees, association committees, and other organizations interested in these subjects. The meeting will be held in response to an invitation sent out by Ehrlich early in July.

The New York state committee, which last winter advocated state grading of gasoline in the report it presented to the legislature, will meet soon with North Carolina's new Gasoline and Oil Inspection Board to discuss that state's progress under its new gasoline grading law. In the meantime, the New York committee is now working "under wraps" in its continued investigation of the state's oil industry.

"We are also working closely with the Pennsylvania investigating committee", Ehrlich said.

The next public hearing of the New York committee will be held "sometime in September", with the actual date and place to be named later.

Depletion Allowance Unchanged in Report

By Teletype
N. P. N. News Bureau

WASHINGTON, Aug. 9.—Despite Treasury Secretary Morgenthau's characterization of depletion allowances as one of the "most glaring loopholes" in the country's present tax structure, the report of the Joint Congressional Committee on Tax Evasion contained no recommendations for curtailment of these allowances. It is probable that any bill which may result from its hearings will likewise ignore depletion.

A bill is expected to be reported out from the House Ways and Means Committee shortly, embodying the main features of the Joint Committee's report.

In an appearance before the Ways and Means group here today, Roswell Magill, under secretary of the Treasury, made no reference to the depletion allowances which his chief had earlier called "loopholes." He did say that a complete revision of the tax structure which the Treasury Department was preparing for presentation to Congress at its next session might propose taxation of income from community property. Citizens of eight states now obtain tax advantages under community property provisions.

Master ok's Amended Reorganization Plan

N. P. N. News Bureau

NEW YORK, Aug. 4.—Another step in clearing the financial status of the Warner-Quinlan Co. was taken today when John E. Joyce, sitting as special master, recommended to federal court here that the amended plan of re-organization of the company be confirmed.

Company assets were listed by Mr. Joyce as $12,398,972 and liabilities at $18,492,403. He appraised the company's service stations as being worth $3,479,-015. Under the re-organization plan they are to be taken over at $4,180,750 by a new corporation backed by Cities Service Co. He declined to accept a good-will item included in the estimate of the value of Warner-Quinlan Co. by objectors to the plan. "Both the debtor and the trustee have sustained losses in operation and upon no theory advanced can the good-will asserted be sustained," Mr. Joyce said.

W. P. R. A. Sessions

TULSA, Aug. 9.—Dates for regional technical meetings sponsored by Western Petroleum Refiners Assn. have been announced by Emby Kaye, vice president, Skelly Oil Co., chairman of the manufacturing committee.

Technical sessions will be held Sept. 21 at Wichita, Kans.; Oct. 5 at Tulsa; Oct. 19 at Shreveport and Oct. 29 at Ft. Worth.

Bituminous Conference, Road Oil Congress to Meet Together

TULSA, Aug. 9.—Montana National Bituminous Conference, joining together for the first time in one conference the consumers and producers of petroleum asphalt, will hold its annual meeting Sept. 7, 8 and 9 at Glacier National Park, Mont. More than 500 highway engineers, together with chemists, engineers and asphalt technologists from the petroleum industry are expected.

The convention this year brings together the Montana Bituminous Conference and the National Road Oil & Asphalt Congress. The road oil and asphalt congress is sponsored by Western Petroleum Refiners Assn.

Montana has been called the "testing laboratory of bituminous roads," since its highway system is composed almost exclusively of bituminous surfaces.

Continental To Start Plant

TULSA, Aug. 9.—Continental Oil Co., Ponca City, Okla., will begin construction immediately of a casinghead gasoline plant in the Billings Field, Noble County, Okla. Plant will cost approximately $200,000 and will have a processing capacity of 2,000,000 cubic feet of gas daily.

Shell Oil Takes Chain Tax Case To Supreme Court

By Teletype
N. P. N. News Bureau

WASHINGTON, Aug. 10.—Shell Eastern Petroleum Products, Inc., has asked the U. S. Supreme Court to declare the concern not liable for $9000 assessed against it under the North Carolina state chain store tax in 1935.

The case came to the Supreme Court from the Fourth U. S. Circuit Court of Appeals, which recently reversed a judgment of the Eastern North Carolina Federal District Court, which, in turn, held that Shell Eastern did not have to pay the taxes involved on 130 leased filling stations.

The filling stations, according to Shell Eastern, were leased for periods of from one year to 18 months, not subject to cancellation by the concern. The lease was an ordinary landlord-tenant lease and made no reference to the sale of gasoline or petroleum products on the premises and did not require the lessee to operate a service station, Shell Eastern says.

In addition to the lease, the parties entered into sales contracts as of June 1, 1935, which required the dealers to purchase only approximately 50 per cent of their requirements of gasoline, motor oils, and greases from Shell Eastern, the company says.

Could Buy Elsewhere

The dealers were left free to purchase 50 per cent of their requirements for such petroleum products from other parties and were not required to purchase from Shell Eastern any other products which they might care to handle, according to Shell Eastern's brief.

In reversing the District Court, the Circuit Court of Appeals declared . . . . "It is a significant fact that, during the whole of the taxable year, not a single one of the 130 service stations under consideration made any attempt to sell the products of any other oil company, and in every case continued throughout the year with the distinctive Shell colors and sold Shell products exclusively."

O'Connor With Allied

NEW YORK, Aug. 9.—F. M. ("Paddy") O'Connor has resigned his position with Bennett Oil Co. here to join the sales department of the Allied Oil Corp., marketers of gasoline, kerosine and fuel oil.

National Petroleum News

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Trade Mark Registered U. S. Patent Office.

Published every Wednesday by The National Petroleum Publishing Co.

Warren C. Platt, *Editor and Publisher*
V. B. Guthrie, *Managing Editor*
A. E. Waldorf, *Advertising Manager*

FOUNDED 1909
Member of Audit Bureau of Circulation and Associated Business Papers, Inc.

Publication office: 1213 W. Third Street, Cleveland, O.
Telephone, CHerry 7672 Cable Address, Plattoil, Cleveland

NEWS BUREAUS

New York, 50 W. 50th Street, Telephone, COlumbus 5-1516 and 5-1517.

Chicago, Buckingham Bldg., 59 E. Van Buren Street, Telephone, Harrison 5901-2-3.

Washington, D. C., 1002 National Press Bldg., Telephone, NAtional 0654.

Tulsa, Okla., 904 World Bldg., Telephone, 3-7132.

Los Angeles, 610-A Hillstreet Bldg., 815 South Hill Street, Telephone, VAndike 2845.

Subscription rate $2 per year in United States and Mexico; $3 in Canada; $3.50 Foreign Countries. Current copies 10 cents; back copies more than two months old 20 cents per copy.

"Cracking" or "Crackling"?

With the various problems of both an economic and technical nature now confronting the oil industry, it ill becomes anyone to thrust another on already burdened minds. However, we do feel a duty, in the light of a challenge brought forward to what has heretofore been unreservedly accepted as fact, and we call upon our leaders in technological thought to again rise to the occasion, and forcefully, lest our industry be torn asunder in a new controversy.

We had always assumed, in the light of our humble knowledge, that the fact that the hydrocarbon molecules were split apart, through physical or chemical decomposition, in the cracking process, had something to do with the name familiarly given this particular phase of the refining operation. However, it now appears that this supposition may have been just one of those surviving superstitions that the march of progress and science ultimately ruthlessly wipes out.

There came to our desk recently a book by James A. Moyer, State Director of University Extension, in Massachusetts, entitled, "Oil Fuel and Burners." Author Moyer's official capacity, by name alone, compels attention; and, if that should not be sufficient to give weight to his utterances, his name bears these formidable initials as appendices; Mem. A.S.M.E., Mem. S.A.E., Mem. A.I.E.E., F.R.S.A., Mitglied V. d I.

His book contains much that is informative on an important subject, but it was in a humble footnote to the text that we found this challenge to one of our, alas, too few oil industry traditions:

"A cracking sound is produced in the tank when this decomposition of heavy hydrocarbons is going on and this fact has given the name to the operation." A simple, straight forward statement and not destined, in appearance, to excite controversy within an industry. Yet the gauntlet has been thrown down.

Author Moyer cites as authority for his statement that the name "cracking" comes from the sound produced in the tank during the decomposition of the liquid—perhaps somewhat similar to that of corn popping or toast being crunched at the breakfast table—Tapp's Handbook of Oil Burning, published in 1931 by the American Oil Burner Association. Here, unfortunately, the trail of origin becomes too indistinct to follow.

We must confess, on those occasions when we were near where the cracking operation has been in progress, that a cracking, or even crackling, sound has not been loud enough to secure our attention. The predominant sound with the cracking operation to us has always been a continuous roaring, somewhat similar to the sound in one's ears after having been stooped over too long looking for a collar button under the dresser. We fear, though, that our observations are of too informal a nature to lend weight to discussion on this subject.

Science always forges ahead, blazing new trails over uncharted seas—if a little looseness in metaphors will be pardoned; but now it must retrace its steps, where the footprints have grown faint, or perhaps altogether disappeared, and determine once for all the derivation of "cracking." Let us hear from the authorities, that the record may be cleared.

Demand Union Audits

As a consideration for negotiating with a labor union and at least as a condition upon signing a contract, why should not the employer require that the labor leaders (?) make complete financial reports to the members covered by the employer's contract?

It is perfectly proper and the accepted practice in business to make a party of more or less unknown and doubtful financial standing, disclose his condition prior to signing any contract. Otherwise of what value the contract?

None of these employing companies would think of contracting with a doubtful party for either the purchase or sale of goods.

None of these labor leaders would consider making a contract with a company of whom there was doubt if it could speak for the business.

The employers, especially those with whom labor unions are concerned, have a known financial standing. They can be brought into court and sued. Why are they not justified, in fact and in law, in insisting that the labor leaders provide all members in the employer's plants with certified public accountant audits of the union's books made up according to certain forms that the employer should specify.

These audits could be required each month and they would have to show the number of paid memberships, the number unpaid, the receipts and their sources, detailed expenses and the names of all persons drawing money to their own accounts for any purposes, say over $100 a month. These audits should be submitted, a copy to every employe each month, as well as a copy to the employer and the government.

To an ordinary layman it would seem that these audits could be required now. The employer would be negotiating with whomever his employes elected to represent them but, to make sure that the other party to the contract was a reliable party and continued at all times to represent such of the employes as it claimed, such a requirement by the employer would only seem to be complying with the Wagner labor relations act.

At the present time the employer may make a contract with an alleged labor union but, unless the employer agrees to a closed shop and the un-American check-off system for union dues, the union may cease to represent the employes within a few weeks, but no one but the union officials would be the wiser. It hardly seems necessary to have to wait for Congress to enact a law to insure unions being responsible. An employer entering into negotiations with them today can require that they disclose their responsibility, or their lack of it, before he proceeds, or before he finally commits himself.

Jackson Becomes New President Of Canfield Oil

CLEVELAND, Aug. 9.—John A. Jackson, 66, son-in-law of co-founder C. G. Barkwill and director of Canfield Oil Co. since 1901, was elected president of the company by its board of directors last week. He succeeds the late Charles M. McLean, who was successor to Louis Carruth. Carruth was president from 1920 until his death last December.

President Jackson announced a policy of encouraging the greatest possible individual initiative on the part of members of the board of directors in actively directing the company. Canfield's board is ideal for such a policy: ten of the 12 are heads of departments.

George R. Canfield was the partner of Mr. Barkwill. They started with $25,000 in 1886 and built a compounding plant to supply the mushrooming "refining companies" actually without physical plants. Today Canfield Oil Co. is capitalized at $1,672,000; has its compounding plant at Jersey City. It operates two refineries at Cleveland and Coraopolis, Pa.; 500 service stations in northeastern Ohio and ships its "William Penn" Pennsylvania motor oil and other products worldwide.

Jackson joined the company Feb. 1, 1898, began handling sales to commission agents. So few oil companies existed in Kansas at that time, it was possible for Canfield to compound lubricating and machine oils from stocks of Mid-Continent origin and ship the products to Kansas and surrounding states. A profitable business was built in the west by Canfield, with local commission agents breaking up the carload lots and distributing to individual farmer consignees. Once Jackson made a hurried trip to Fargo, N. D., when no commission agent appeared, found a month's mail of the agent stacked in the post office and accumulating demurrage on three freight cars. Jackson and a local trucker unloaded and sorted the barrels, cans and cases. "A real job," Jackson commented yesterday.

In 1904 the American Petroleum Co., operating a refinery at Findlay, O., was merged with Canfield and Jackson became manager of the plant. This was sold to National Refining Co. two years later and he was appointed secretary of the Canfield Oil Co. Except for a two-year diversion to run a family brick plant, he has steadily succeeded in various offices of Canfield.

Truman Proposal to Require Licenses For Interstate Drivers Reported

N. P. N. News Bureau

WASHINGTON, Aug. 9.—Last week's favorable report by the Senate Interstate Commerce Committee on the Truman bill to prohibit operation of motor vehicles in interstate commerce by unlicensed operators "gives new impetus to the national effort to lay greater stress on the qualifications of those who drive," according to the American Automobile Assn.

A similar bill is pending in the House. Its effect would be to confine to state borders all vehicles in states which do not license drivers following an examination in which the applicants must undergo eyesight tests, show an ability to read and understand highway signs, and demonstrate their ability to exercise reasonable care at the wheel.

Senator H. S. Truman, Mo., author of the Senate bill, has indicated his desire to push the bill through to enactment, although it will not be effective, as now written, until four years after passage.

During the four-year period, it is believed the states which now have ineffective driver licensing laws, or none at all, will "set their houses in order" so that by the time the act becomes effective, their citizens will not have to be penalized because of inadequate laws. After the Federal law becomes effective, a motorist from a state which does not examine its drivers before allowing them to drive will not be permitted to operate his car outside his home state.

More than half the states would be affected by the bill, according to A. A. A. Five states—Florida, Illinois, Louisiana, Mississippi and South Dakota—are without any form of license law except the licensing of chauffeurs in three. Wyoming's law "must undergo legislative changes," according to the A. A. A. to comply with the provisions of the Truman bill.

No provision is made for a mandatory examination of applicants for license in 11 states, Alabama, Arkansas, Indiana, Maine, Minnesota, Missouri, Nevada, North Dakota, Texas and Wisconsin, and twenty or more other states would find it necessary to strengthen existing license laws.

Hansen Elected Iowa President

DES MOINES, Aug. 9. — New officers were elected by the Iowa Petroleum Assn. at a meeting here recently with Fred Hansen, Hansen Garage, Harlan, as president and G. D. Finnigan, Super Service Oil Co., Cedar Rapids, vice-president.

Albert Stoessel, Stoessel Oil Works, Ottumwa, serving a second term as president, resigned effective Aug. 1, as did M. L. Long, secretary for 14 years.

The Iowa association had been divided into several factions. One group, which sought marketing reform through legislation, had been considering formation of a new association.

The recent meeting was one for harmony and continuation of the present association.

* * *

DES MOINES, Aug. 9.—M. L. Long, former secretary of the Iowa Petroleum Assn., announced recently in 30 Iowa newspapers organization of the Oil Marketers Service Assn. of Iowa, with headquarters in Des Moines. The organization will offer its services on a fee basis, on statistical and marketing information on the industry. Mr. Long will be the manager.

McConnell Made Sales Executive

CHICAGO, Aug. 9. — R. F. McConnell has been promoted to assistant general manager of the general sales division of the Standard Oil Co. of Indiana, President E. G. Seubert has announced. He succeeds the late H. A. Lewis.

McConnell joined the company in 1907 as clerk at Detroit. After being at other points he became manager at South Bend and later at Detroit. He was advanced in 1929 to assistant general manager of sales in field divisions.

H. E. Hanson, manager at Indianapolis since Jan. 1, 1937, succeeds McConnell. Hanson joined Indiana Standard May 15, 1909, as secretary at Des Moines and was advanced to assistant manager at Mason City. He was manager at Mason City, Joliet, and Indianapolis.

Other sales department promotions announced by Mr. Seubert are:

R. S. Orr, manager at Wichita, to succeed Hanson at Indianapolis. J. W. Ross, assistant manager at Kansas City, to succeed Orr at Wichita. J. A. Pearson, assistant manager at Wichita, to succeed Ross at Kansas City.

13 Oil Companies Join To Exhibit At World's Fair

N. P. N. News Bureau

NEW YORK, Aug. 9. — To show how the petroleum industry is contributing to human comfort and happiness and how it promotes economic welfare, 13 oil companies in New York and Philadelphia have banded together to form the Petroleum Industry Exhibition, Inc., to exhibit at the New York World's Fair in 1939. The new company was organized upon the recommendation of the American Petroleum Institute's World Fair Committee.

Heading the petroleum exhibit organization as president is Thomas H. Taylor, Standard Oil Co. of New Jersey. Other members of this sub-committee appointed by the A.P.I. committee are Daniel T. Pierce and P. C. Spencer, Sinclair Refining Co.; E. E. Puryear and Thomas K. Schmuck, The Texas Co.; and Robert H. Scholl, Standard Oil Co. of New Jersey.

Officers of the new organization, in addition to President Taylor are: Mr. Pierce, Mr. Puryear and W. R. Boyd, Jr., American Petroleum Institute, vice-presidents; R. P. Resor, Standard Oil Co. of New Jersey, treasurer; and Victor H. Scales, American Petroleum Institute, secretary.

Board Members

Members of the board of directors, each representing a participating oil company, are: R. E. Wilson, American Oil Co., New York; H. B. Stone, Atlantic Refining Co., Philadelphia; H. D. Frueauff, Cities Service Oil Co., New York; C. H. Hathaway, Gulf Oil Corp., Pittsburgh; L. S. Westcoat, Pure Oil Co., Chicago; W. C. Burns, Richfield Oil Corp. of New York, New York; R. R. Griffin, Shell Union Oil Corp., New York; B. B. Jennings, Socony-Vacuum Oil Co., New York; W. C. Pew, Sun Oil Co., Philadelphia; S. W. Candee, Tide Water Associated Oil Co., New York; and Messrs. Pierce, Taylor and Puryear, representing their companies, mentioned earlier.

These companies, rather than exhibiting singly, decided to pool their finances and personnel and to build a separate building to concentrate under one roof a unified and comprehensive exhibit. The plot selected covers nearly 65,000 square feet and cost $22,000. The petroleum exhibit organization is furnishing backing for the fair totaling $1,770,000 in bonds issued by the fair corporation.

Action A'Plenty Under Michigan Fair Trade Law

(*Continued from page* 17)

nical violation, but that no criminal intent was involved.

McCrea said that it was not his intention to prosecute violators ignorant of the law and that he has asked police to warn all gasoline station operators in the various precincts.

"If, after being warned, they persist in violating the law, they will be prosecuted," he said.

Also, on Aug. 7, in the face of this new law, four Detroit dealers who have been estimated to sell 700,000 gallons of gasoline a month through their 12 stations, paid for a one-quarter page ad in the local morning newspaper to tell their customers that their gasoline discount policy is again in effect.

The ad states that these dealers are again "selling their respective brands of gasoline at prices in effect before July 26," and invites all customers to return and receive the same savings as they have had in the past.

One of these dealers told a NATIONAL PETROLEUM NEWS representative that this group met with the dealers' association on July 26 and agreed to stop discounting on the promise that the retail situation would be immediately cleaned up and that there would be no more chiseling.

Sales Dropped Off

According to this dealer, the group of four operators began at once to discontinue their discounting practice, with the result that their gasoline business steadily diminished, going to other dealers who offered rebates.

Rather than see their gallonage diminish, while they made an effort to keep the spirit of the law, these four dealers decided to place the advertisement in the newspaper announcing a resumption of their discount practice.

What action will be taken on this apparently open defiance of the state's new fair trade law has not yet been determined. Some dealers are of the opinion that the law is discriminatory, and therefore cannot be enforced. They claim that it is unlawful to discriminate against only gasoline dealers and bakers, as this law does, when similar discounting practices are going on in many other retail fields.

The four dealers in the Detroit area who signed the advertisement announcing the re-establishment of their discount policies are: James J. Bright & Son, four stations; Firestone Auto Supply & Service Stores, two stations; Ned's Auto Supply Co., four stations; and Stark Hickey, Inc., two stations.

Asked what action it planned to take in the matter, the prosecutor's office would only say, "we are investigating it."

Dealers Worked For It

That the Michigan dealers' association is an active one is evidenced by the fact that it was instrumental in bringing about this new law. Led by its secretary, Rankin P. Peck, this organization led the law during its pregnancy through the many mysterious corridors and chambers of the state house at Lansing without losing it, which is in itself an accomplishment.

Today the new law is something like a mad dog. No one knows just where it will take hold next. The prosecutor's office is now gathering evidence in the Detroit area in an effort to establish more cases of violation. McCrea has assigned one of his assistants, Paul Mayrand, to the job of leading the investigation. He has at his command a detail of police investigators, and in addition, the dealers' association has organized itself into group of self-styled sleuths to report violations.

During the past week the prosecutor's office has been busy questioning some oil company officials and dealers on their methods of doing business and the basis for the prices and price differences. Out of these "conferences" are expected to eventually come more warrants and, if we are to believe the much-quoted Mr. McCrea, a possible grand jury investigation.

Detroit Prices Fickle

McCrea's brief investigation of "Dynamic Detroit's" local retail gasoline price policy is bringing him many educational rewards. He has found that the local price is as fickle as a seasick passenger's stomach.

McCrea has found what he claims are some open and flagrant violations of the new law. However, when an attempt is made to fasten the responsibility, "the buck is being passed from one phantom oil company to another. Some of it would be ludicrous were it not so injurious to the public."

McCrea then pointed to an example.

"The gasoline of one of the large oil companies is being sold at widely different prices in different sections of this city," he explained. "This is a flat violation of the new law. Either that part of the public paying the higher prices is being grossly discriminated against, or the competing dealers in the low priced section are being imposed upon. Both these things are expressly prohibited by this law."

McCrea then added that, when the large oil company involved was questioned, it claimed that a large tire company was in control of the discount stations. Then when the tire company was questioned it disclaimed any control, with the statement that a large gasoline hauling contractor was the party in control.

"The same large oil company that now disclaims control over the sale of its products is right now under indictment in the federal courts for exercising too much control over the sale of its products," McCrea said.

"This is the kind of hocus-pocus that law-enforcing agencies have had to deal with in the past so far as the large oil companies are concerned. These loop-holes have been plugged up by this new law and a grand jury investigation of this array of ghosts in the oil business will be a decided benefit to the community. I am gathering evidence with that in mind," concluded McCrea.

In any event, it can be reported that the process of washing the necks of certain Detroit dealers has begun. Whether a state law can bring a halt to the methods of some of these five-gallons-of-gas-free-with - every-new-tire stations, will be strictly a matter of enforcement. Robbery and rape are against the law in Michigan, too, but the practice continues.

Below Cost Sales Outlawed in Pa.

PITTSBURGH, Aug. 10.—Not to be outdone by the wave of fair competition laws approved by numerous state legislatures in recent months, Pennsylvania now presents to its citizenry a Fair Sales Act, which was approved July 1 and goes into effect Sept. 1.

Already bulging with regulatory competition laws, such as the newly effective price posting law and the automobile dealers' "little NRA" act, Pennsylvania, with this new fair sales act, certainly sits near the head of the class of states which are endeavoring to legislate marketing operations into fair competitive practices.

The fair sales act was passed "to insure and protect fair trade practices in distribution, defining such practices, prohibiting the advertisement, offer for sale, or sale, of merchandise at less than cost and fixing a penalty for such advertisement, offer for sale, of sale and investing the courts with jurisdiction to prevent and restrain violations of the act."

In other words, the principal import of the law is that selling or advertising merchandise for sale below cost is prohibited. Any retailer or wholesaler who violates the terms of the law is guilty of a misdemeanor and, if convicted, liable to a maximum fine of $500.

In addition to this penalty, every common pleas court in the state is authorized to prevent and restrain violations of the act.

Under the terms of the act, any person is entitled to sue for injunctive relief against threatened loss or damage by reason of a violation of the act.

The provisions of the act do not apply to sales at retail or wholesale where:

(a) merchandise is sold in bona fide clearance sales and is advertised, marked and sold as such;

(b) Perishable merchandise must be promptly sold in order to forestall loss;

(c) Merchandise is imperfect or damaged, or is being discounted, and is advertised, marked and sold as such;

(d) Merchandise is sold upon the final liquidation of any business;

(e) Merchandise is sold for charitable purposes;

(f) The price of merchandise is made to meet the legal price of a competitor for merchandise of the same grade, quality and quantity;

And (g) merchandise is sold by any officer acting under the direction of any court.

A final clause in the act provides that, in case any part shall be declared invalid or unconstitutional, "such decision shall not affect the validity of the remaining parts hereof."

In stating that the retailer or wholesaler cannot sell below cost, the law defines the word "cost" by stating it is the total consideration paid by the retailer or wholesaler for the merchandise delivered at the purchasers outlet.

As a secondary definition it states that the cost to the retailer or wholesaler is the total consideration necessary for the replacement of the merchandise to the retailer or wholesaler at his outlet, such consideration to be determined by applying to said merchandise the same cost per unit as the last quantity purchased, prior to the sale of said merchandise, would have cost per unit if bought at the most favorable market price available at any time within 30 days prior to said sale, whichever is lower, less any customary trade discounts, but exclusive of discounts for cash.

WASHINGTON

By A. M. PETTY
N. P. N. Washington
News Bureau

From the Crown Block . . .

Anti-Trust Probe of Oil Jobbers Is Packed Away in Moth Balls

WASHINGTON, Aug. 9 Newspapermen assigned to the Department of Justice have received word from a source close to the attorney general that they might as well pack away in moth balls the story about an anti-trust investigation of oil jobbers.

The Associated Press, which sent out the news dispatch originally, has not retracted it; nor has Attorney General Homer S. Cummings backed down on his confirmation of the AP story.

More or less by mutual agreement the matter has been buried —unless some tactless newsman, not a regular habitue of the department's red-carpeted press room, should grow inquisitive at some future press conference.

Quite apparently the story was planted in the first place at Cummings' instigation. But whatever purpose the attorney general may have had in mind—to throw a scare into some group of jobbers or what—it failed.

First suspicions about the story were strengthened when anti-trust lawyers insisted that they knew nothing about any investigation of oil jobbers. And they continued to deny the story even after Cummings "confirmed" it at his press conference of July 28.

Without reservation, Cummings stamped as true the AP story of July 22 which stated that the justice department was investigating wholesale oil jobbers in eastern states on charges of violating federal anti-trust laws by pegging gasoline prices.

"Our spear knows no brother," quoted Cummings when it was pointed out that an anti-trust probe of jobbers was a unique occurrence.

To cap the whole affair, Cummings, at his Aug. 4 press conference, revealed that an anti-trust investigation of major oil companies in the east is now under way. Charges are similar to the allegations in the so-called oil conspiracy indictments returned at Madison, Wis., Cummings said.

Whether this investigation of the major companies and the investigation of the jobbers, mentioned July 28 by Cummings, are parts of one big anti-trust probe in the east or two distinct cases, was not made clear by the attorney general. But the story about investigating jobbers had entered the apocryphal group by that time, anyway.

Cummings' announcement that the anti-trust oil investigation staged at Madison will be reenacted on the East Coast simply confirms reports current in the industry for some months. Early last spring, G-men showed up in several states along the Atlantic seaboard, questioning independent jobbers about their contractual relations with their suppliers.

Some eastern jobbers have made no secret of the fact that they have been pressing the justice department to impanel a federal grand jury, say at New York, to probe the major companies on charges similar to those which brought about the Madison inquiry.

Despite Cummings' announcement, it is not expected that the eastern oil investigation will reach a head for some months yet. The anti-trust lawyers who usually handle oil matters at the department will be busy at Madison beginning about Sept. 15.

For similar, but not the same, reasons the justice department may delay for sometime yet any announcement of what action it plans to take as a result of the report by the Federal Trade Commission on its investigation of West Coast oil companies.

The FTC report, due at the justice department on Dec. 15, 1936, did not arrive until four months later. So, the department sees no particular reason to hurry up its decision.

Back in April, 1935, the attorney general "requested" the FTC to investigate oil companies on the West Coast and see how they were behaving under the consent decree entered in the 1931 anti-trust suit out there.

There has always been the suspicion that the FTC, for reasons of its own, wangled this "request" for an investigation out of the attorney general.

* * *

Triple Play on Tidelands

By a triple play that almost failed when the Senate Public Lands Committee fumbled, Attorney General Cummings has at last succeeded in passing the buck on the question of who has title to oil-bearing lands covered by tides.

The question came up when Interior Secretary Ickes referred to Cummings a letter from a California producer who had been rebuffed by the state and then turned to the Interior Department with an application to lease tidelands off the California coast believed to be oil lands.

It seemed a simple question at Cummings' first glance but later a dispute arose within the justice department as to the correct ruling.

Cummings' prayers seemed answered when Senator Gerald P. Nye, North Dakota, out of a clear and unsuspected sky, introduced a bill asserting title of the U. S. to mineral rights under tidelands.

The attorney general promptly replied to a request of the Senate Public Lands Committee, considering the bill, for his opinion on the measure.

Like all such opinions, Cummings' letter was carefully worded—perhaps too much care was taken.

It now develops that some members of the Senate committee are in controversy as to what Cummings meant, some interpreting the letter to mean that the justice department believes that enactment of the Nye Bill is unnecessary to give the government title to oil under the tidelands.

Committee members taking this view are wondering why the attorney general has not answered Ickes' letter of six months ago asking for a ruling on the tidelands question.

Confronted with this situation by newspapermen at his press conference, Cummings hinted that those interpreting his letter as indicating a belief that the Nye Bill is unnecessary to accomplish its avowed purpose, should read it again.

Cummings concluded with the statement that, before taking any steps in the tidelands matter, he would wait to see what action Congress will take in the matter.

This would indicate that Cummings believes he has succeeded in passing the buck to the boys on Capitol Hill.

Postpone Lube Tax Hearing

PHILADELPHIA, Aug. 7.—A group of oil company officials were on hand recently for a hearing before the finance committee of the Philadelphia City Council on a proposed city lubricating oil tax of two cents a quart, but the hearing was postponed on motion of Councilman A. P. Keegan, who introduced the bill. No date was set for a new hearing.

It was estimated that the tax would bring $1,000,000 annually into the city treasury.

AAA Man Leads 'Gas' Tax Fight

ST. LOUIS, Aug. 9.—Matt F. Morse of Ladue, Mo., secretary of the Automobile Club of Missouri, was elected last week chairman of the referendum committee seeking to stop an increase in Missouri's gasoline tax rate.

Other officials are Roland H. Record, Kansas City Motor Car Dealers, president; W. A. McGrew, mayor of Flat River, vice-chairmen, and U. G. Lewellen of St. Louis, secretary of the Missouri Petroleum Industries Committee, secretary and treasurer.

After the meeting Lewellen reported about 60,000 petitions in circulation, and that first indications are that sufficient signatures will be obtained.

Missouri's recent legislature raised the gasoline tax rate 1-cent, effective when the present constitutional 2-cent limit expires in November 1938. If 65,000 signatures are obtained the law will be stayed, and put to a referendum vote at the November, 1938, general election.

Chairman Morse disagreed with a press statement of Governor Lloyd C. Stark implying that the tax increase passed by the legislature should be allowed to go into effect without protest. Morse said that the governor vetoed a bill to reduce license fees 50 per cent, and that the state highway department reported that additional funds were not needed.

Gasoline Demand Gains 12.05 % In First Five Months of 1937

N. P. N. News Bureau

NEW YORK, Aug. 8. — An increase of 806,366,000 gallons, or 12.05 per cent, in gasoline consumption in the U. S. was indicated for the five months ended with May this year, over the corresponding period of last year, in gasoline tax reports filed by wholesalers and dealers under the various state tax laws, the American Petroleum Institute says. The 12.05 per cent gain is in daily average consumption. The gain in the five-month period this year is 11.31 per cent over the period last year, last year having one extra day.

Daily average consumption in the five-month period this year was 52,534,000 gallons, compared with 46,883,000 gallons last year.

Percentages of increase in gasoline demand so far this year, over the corresponding months of 1936 have been: January, 6.12 per cent; February, 12.79; March, 13.32; and April, 12.61.

Only two states reported decreases, these being Nebraska, with a decline of 0.19 per cent and South Dakota, with 4.10 per cent. Increases ranged from 0.66 per cent in Kansas to 24.17 per cent in West Virginia. Thirty-three states reported increases of over 10 per cent and 10 states reported increases of more than 15 per cent.

During May, consumption was at the rate of 60,626,000 gallons daily, compared with 55,037,000 gallons daily in May a year ago, indicating an increase of 5,589,000 gallons, or 10.16 per cent. Total increase for the month was 173,287,000 gallons over May a year ago.

Among the six largest consuming states, California showed the largest gain in demand for May, with 25.80 per cent. The other five states showed these gains, in percentages: Illinois, 12.12; New York, 7.28; Ohio, 8.66; Pennsylvania, 10.70; and Texas, 23.69.

Details are given in the accompanying table:

Kentucky's Law Will Be Tested

(*Continued from page* 17)

tacked was designed to increase highway safety, it has the reverse effect.

This is achieved by increasing the number of vehicles necessary and encouraging the number of light, overload trucks of flimsy construction and inadequate tire and braking surfaces, it is said.

The complainants—35 truck operators—claim that the law doubles the cost of their operations because it requires use of two pieces of equipment where one would suffice. In many cases, they say, standard-sized transports must be unloaded at the Kentucky line, their freight hauled across the state in lighter trucks, and, if it is moving beyond the state for any considerable distance, reloaded into larger trucks at the opposite border.

Just Rates Prevented

Such doubled costs and delay prevent the truckers, the American Trucking Ass'ns. said, from establishing and maintaining just and reasonable rates, as required by the Motor Carrier Act.

Kentucky officials charged with enforcement of the law are named as defendants in the suit.

The South Carolina case, in which the state's restrictive 20,000-pound truck law was outlawed by a statutory, three-judge federal court, has been appealed to the U. S. Supreme Court. A ruling is expected shortly after the court reconvenes for its October session.

A 36-Hour Week Sought by C.I.O.

(*Continued from page* 17)

ever, that, if the 40-hour provision is retained in the law, as it applies to the oil industry, it may encourage some other oil companies to raise their work weeks from 36 to 40 hours.

"In marketing," according to the labor union chief, "the chiselling employers are generally to be found among the independent jobbers and the operators of trackside stations."

Bars Retailing

There is one obstacle looming in the path of Fremming's plans for a 48-hour week for filling station employes.

The wage-and-hour bill, as passed by the Senate, expressly excludes from its provisions any person employed in a "local retailing capacity." This apparently would exclude the great majority of filling stations from the law's provisions.

As the bill reached the floor of the House, however, this exemption for retailing operations was limited to apply only to outside salesmen.

Even if the bill in its final form purports to cover retailing—and wholesaling operations, too, such as bulk plants—there is serious doubt as to whether the courts would stretch Congress' interstate commerce powers to include such transactions which up to date have been regarded as purely local matters.

The wage-and-hour bill is a complicated measure and few observers will hazard a guess as to its final form.

Briefly, it seeks to bar from interstate commerce any products made under substandard labor conditions. A newly-created board, to be known as the Labor Standards Board, would hold hearings and set minimum wages and maximum hours for each industry, with differentials for various sections of the country.

Wisconsin Golf Party

MILWAUKEE, Aug. 2.—The second annual golf party of the Wisconsin Petroleum Assn. will be held Aug. 19 at the Oneida Country Club at Green Bay. Roy L. Brecke, secretary, announced a dinner at 6 p. m.

Gasoline Consumption, By States, for May and Five Months of 1937

(Figures in Thousands of Gallons)

	Month of			% Change 1937 over	5 Months Ended With		% Change 1937 over
	April, 1937	May, 1937	May, 1936	1936	May, 1937	May, 1936	1936
Alabama	18,454	19,501	16,634	+17.23	88,644	76,922	+15.24
Arizona	8,729	8,583	7,545	+13.76	40,986	37,715	+ 8.67
Arkansas	14,016	13,617	12,284	+10.85	64,205	56,126	+14.39
California	143,142	158,117	125,692	+25.80	697,323	652,660	+ 6.84
Colorado	17,543	19,560	17,145	+14.08	80,439	72,637	+10.74
Connecticut	25,130	29,461	26,906	+ 9.50	119,040	106,172	+12.12
Delaware	4,431	4,970	4,681	+ 6.17	20,438	17,619	+16.00
District of Columbia	11,590	12,212	11,209	+ 8.95	53,846	48,632	+10.72
Florida	27,647	25,445	25,700	— 0.99	145,736	142,654	+ 2.16
Georgia	26,114	26,808	26,545	+ 0.99	127,324	115,164	+10.56
Idaho	7,097	8,856	7,718	+14.74	30,118	27,305	+10.30
Illinois	103,934	122,602	109,346	+12.12	486,928	435,709	+11.75
Indiana	50,763	56,779	51,953	+ 9.29	232,961	204,401	+13.97
Iowa	44,188	49,491	45,968	+ 7.66	186,754	166,232	+12.34
Kansas	36,613	39,282	39,259	+ 0.06	163,218	162,149	+ 0.66
Kentucky	21,167	20,948	19,289	+ 8.60	95,325	79,898	+19.31
Louisiana	18,925	20,074	17,882	+12.26	90,789	81,785	+11.01
Maine	9,351	12,532	12,006	+ 4.38	45,634	40,129	+13.72
Maryland	21,785	23,981	21,842	+ 9.79	100,637	87,727	+14.72
Massachusetts	54,703	61,827	59,455	+ 3.99	255,662	231,895	+10.25
Michigan	87,669	98,654	88,846	+11.04	413,827	352,580	+17.37
Minnesota	41,705	44,403	46,671	— 4.86	172,242	159,039	+ 8.30
Mississippi	16,011	15,662	14,494	+ 8.06	72,579	61,476	+18.06
Missouri	48,681	50,264	48,085	+ 4.53	219,639	209,828	+ 4.67
Montana	11,097	10,320	11,082	— 6.88	39,627	37,125	+ 6.74
Nebraska	19,148	19,002	20,305	— 6.42	84,420	84,581	— 0.19
Nevada	2,836	3,161	2,702	+16.99	12,137	11,517	+ 5.38
New Hampshire	5,627	7,306	7,089	+ 3.06	28,318	25,926	+ 9.23
New Jersey	67,106	74,306	65,495	+13.45	307,757	268,260	+14.72
New Mexico	7,075	7,032	6,194	+13.53	32,871	27,586	+19.16
New York	141,924	167,790	156,404	+ 7.28	672,019	603,429	+11.37
North Carolina	36,415	32,003	29,414	+ 8.80	150,780	126,093	+19.58
North Dakota	13,293	12,075	13,641	—11.48	41,167	38,471	+ 7.01
Ohio	107,127	112,063	103,131	+ 8.66	489,717	429,092	+14.13
Oklahoma	30,789	31,819	30,523	+ 4.24	141,609	138,113	+ 2.53
Oregon	17,740	21,157	16,497	+28.25	80,370	75,903	+ 5.88
Pennsylvania	113,579	127,911	115,551	+10.70	529,539	458,130	+15.59
Rhode Island	9,762	11,082	10,130	+ 9.40	46,304	41,202	+12.38
South Carolina	15,530	15,989	13,230	+20.85	74,585	61,041	+22.19
South Dakota	9,517	9,623	10,614	— 9.34	38,911	40,507	— 4.10
Tennessee	22,777	19,642	20,659	— 4.92	100,808	92,647	+ 8.81
Texas	99,783	104,954	84,855	+23.69	466,955	413,393	+12.96
Utah	7,000	7,645	6,883	+11.07	31,138	27,850	+11.81
Vermont	3,919	5,349	5,171	+ 3.44	20,582	18,534	+11.05
Virginia	27,940	30,247	27,041	+11.86	128,771	112,720	+14.24
Washington	27,042	30,133	24,798	+21.51	119,600	116,010	+ 3.09
West Virginia	14,290	21,699	16,238	+33.63	78,495	63,215	+24.17
Wisconsin	43,106	48,134	46,623	+ 3.24	191,862	170,671	+12.42
Wyoming	4,426	5,349	4,708	+13.62	20,000	17,800	+12.36
Total	1,718,236	1,879,420	1,706,133	+10.16	7,932,636	7,126,270	+11.31
Daily Average	57,275	60,626	55,037	+10.16	52,534	46,883	+12.05
Change from previous year:							
Total change	.....	+173,287	.....	.....	+806,366	.....	.....

Will Offer Issue of $44,000,000

By Teletype
N. P. N. News Bureau

CHICAGO, Aug. 10. — Common stockholders of the Pure Oil Co. are to be offered rights to subscribe to a $44,244,000 issue of new cumulative convertible preferred stock, according to amended registration statement to be filed today with the Securities & Exchange Commission. Par will be $100.

About $7,800,000 is for refinery modernization on program started last year. Of balance, $3,000,000 is to pay balance on bank loans maturing from 1938 to 1940, $8,400,000 for redeeming on Jan. 1 of eight per cent cumulative preferred shares, and $25,000,000 to retire bank loans in providing portion of sinking fund for redeeming 15 year, 4½ per cent sinking fund notes on July 1, 1937. Details of conversion are to be announced later.

Net earnings also filed with the SEC were $3,600,000 for 1937 first quarter. Net earnings in 1936 were $7,658,000.

Sun Earnings Gain In First 6 Months

CLEVELAND, Aug. 9.—Report of the Sun Oil Co. and subsidiaries, for the six months ended June 30, 1937, showed a net income of $4,376,371, after setting aside all adequate requirements for depreciation, depletion reserves, taxes and bond interest and preferred dividend requirements. This was equivalent to earnings of $1.90 per share of common as against $1.57 per common share in the same period of 1936. Earnings in 1935 were $1.52 per common share, for the equivalent period.

Current assets of Sun as of June 30, 1937, including $6,275,348 in cash and $34,936 marketable securities, amounted to $34,728,208 and current liabilities were $13,481,318.

The balance sheet was prepared in accordance with the form adopted by the American Petroleum Institute and requested by the Securities and Exchange Commission.

On Feb. 15, 1937, Sun Oil Co. had outstanding $5,964,000 3¾ per cent debenture bonds and the Sun Pipe Line Co. nad outstanding $3,400,000 3½ per cent debenture bonds. The Sun Oil Co. sold privately an issue of $9,000,000 2¾ per cent serial debentures, retiring its outstanding bonds of $5,964,000, and loaning $3,000,000 to the Sun Pipe Line Co.

Indians Get the Oil

WASHINGTON, Aug. 9.—A bill providing that mineral rights to lands of Chicasaw and Choctaw Indians in Oklahoma shall be reserved "for the benefit of said Indians" when any of the lands are sold by the Secretary of the Interior, has been reported out by the Senate indian affairs committee.

Also reported out by the same committee was a bill allowing the secretary to lease unallotted lands in an Indian reservation or owned by after authority from the tribal council or other spokesmen for the Indians.

Indiana Association Enters 6.6 Case

N. P. N. News Bureau

WASHINGTON, Aug. 9.—Another complaint against the estimated weight of 6.6 pounds per gallon which Interstate Commerce Commission permits railroads to use in computing rail freight rates on gasoline and certain other petroleum products has been drafted and sent to the commission for filing.

The complainant—in the case is Indiana Independent Petroleum Assn. Inc., which charges that the estimated weight is "substantially in excess of the actual weight."

Although it is not actually on file as yet, it is probable that IIPA's complaint will be docketed within the next week or so. It is being held up pending minor changes, the commission said.

The new complaint against 6.6 lbs. is similar to that filed by Tankar Gas, Inc., Minneapolis, several months ago which opened the attack on the estimated weight. Several railroads are defendant.

Oil Compensation Rate Is Studied

N. P. N. News Bureau

LOS ANGELES, Aug. 7.—Unusually high rates paid by the oil industry—particularly the independent companies—for workmen's compensation insurance is the subject of a study being made by the Oil Producers Agency of California.

A plan aimed at educating the independent operator in a safety program has been suggested by Rush M. Blodget, executive vice president of the agency, as a means of reducing the compensation insurance rates. The plan would provide for the formation of a mutual company to handle the insurance and to organize the educational program.

It was indicated that independent producers paid approximately $1,250,000 in premiums for this type of insurance during 1936 and this was approximately 5 per cent of the total workmen's compensation insurance premium paid in California for all industries.

Investigation showed that premiums were calculated on a basic rate, fixed on the experience of the industry, and that the California basic rate is high owing to the former high accident experience of the oil industry. The basic rate in California for the current year was advanced April 1, 1937, by 11 per cent over that of last year, in some classifications over 600 per cent.

1937 Costs Higher

It is estimated this will cost the independents an additional $200,000 for premium payments in 1937. Many small operators were declared to find difficulty in obtaining such insurance, and in many cases are compelled to pay an arbitrary surcharge over the already high basic rate.

Companies which carry on safety programs and reduce the accident frequency are given a reduced rate, known as an experience modification rate. If the record of accidents is bad, the modification is a debit.

The agency found a wide divergence in the rates paid by independent operators, some paying double the rate paid by others, based upon the experience of the company in accident frequency. It was shown that one operator was paying a rate of 147 per cent of the basic rate, whereas another company with a good accident record paid 60 per cent of that rate.

Blodget argues that the basic rate itself can be reduced. He points out that this rate for the oil industry was established upon the accident experience of all operators, and the careful, safety-conscious operator still pays for the carelessness of his neighbor.

Success in promoting safety measures through a mutual insurance company—will, it is believed, obtain favorable experience modifications, as well as reduced basic rates.

Simrall To Run More Mich. Oil

MT. PLEASANT, Mich., Aug. 9.—An increase of 5000 barrels in its daily take of crude oil from the Buckeye field in Michigan is expected by the Simrall Pipeline Corp. through its Michigan-Toledo pipe line soon, according to a company executive. The added capacity will be made possible by newly installed booster equipment in the line.

Up until the present time the company has been running approximately 8000 barrels daily from the Buckeye field. The booster equipment will enable Simrall to deliver an estimated total of 24,000 barrels daily through all of its Michigan lines to Toledo refineries.

In addition to the boost given the Buckeye field by the Simrall line expansion, the new Naph-Sol Refining Co. line is expected to begin operations this week with a daily take from the Buckeye field of 4000 to 5000 barrels. This line runs from the Buckeye field to loading racks at Colman, Mich.

The McClanahan-Leonard pipeline and Pure Transportation Co. lines account for approximately 7500 barrels daily of additional output, according to reports.

Oil Taxes Over Billion-Dollar Mark As Depression Period Ends

NEW YORK, Aug. 2.—Petroleum taxes were the only major source of tax income which did not decline during the depression, according to the American Petroleum Industries Committee. Taxes collected by federal, state and local governments now are at approximately the 1929 volume, but petroleum taxes in 1936 were almost twice those in 1929, the Institute stated.

The following table shows how the tax burden has moved upward since 1929:

Year	Total Nat. Income	Total Taxes	Pet. Ind. Taxes
1929	$80,757,000,000	$9,759,000,000	$625,680,870
1930	67,969,000,000	10,266,000,000	670,606,663
1931	53,584,000,000	9,300,000,000	684,777,687
1932	39,545,000,000	8,147,000,000	747,097,125
1933	41,813,000,000	7,501,000,000	1,004,824,028
1934	49,575,000,000	8,767,000,000	1,046,149,575
1935	54,955,000,000	9,650,000,000	1,121,936,698
1936	63,799,000,000	10,100,000,000	1,180,876,256

Mid-Continent Skyline

By LAWRENCE E. SMITH, N. P. N. Tulsa News Bureau

TULSA, Aug. 7

To anyone wishful of having a thing said gently and politely, with just that touch of finesse needed in the handling of delicate topics, we recommend the Hon. William F. Lowe, secretary of the Natural Gasoline Assn. of America. In a recent report on the meeting of the Natural Gasoline Supply Men's Assn., he said:

"In a general discussion of plans for next year, it was unanimously agreed that room entertainment of the 'open house' type by individual member companies was not good advertising, that it often resulted in severe criticism from oil company executives whose employes indulged themselves excessively at such functions, thereby impairing their ability to absorb the true value of the convention technical discussions. . . ."

In other words, somebody has been tight on supply company likker, eh, Bill?

* * *

Ickes Pacifies the Indians

On June 22 the smallest auction of Osage tribal oil leases in years was held. Oil men bid a total of $8,975 for 35 tracts. The Osage council decided it wasn't enough and rejected the entire offering.

The council has listened to Sec. Ickes, who thought there might be future unpleasantness, and last week it met and approved bids on 32 of the tracts. It saved face a little by rejecting three bids, totalling $1,125.

Oil men were quite indifferent as to whether the council approved the bids. The Osage has nothing of more than routine interest under development now and wildcatting is at low ebb.

* * *

Geologists Plan Meeting

The 1937 mid-year meeting of the American Assn. of Petroleum Geologists will be held in Pittsburgh, Pa., the technical program to be held Oct. 14-16 inclusive. Field trips, of which several have been arranged, will start Oct. 11. There is a great deal of geology visible in and around Pittsburgh and very much of it in West Virginia and M. Gordon Gulley, of the Gulf Oil Corp., has been poring over road maps and estimating m. p. h. for several weeks. He is chairman of the trip committee.

Besides the journeys through the Appalachians, it is planned to visit the fields of northwestern Pennsylvania, including the celebrated Bradford field, where water-flooding originated. Another field trip is to the stadium of Carnegie Tech, on Saturday, where a group of students will meet a group from Notre Dame in a seismic disturbance.

Under the chairmanship of Thurman H. Myers, Pittsburgh, an outstanding technical program has been arranged. Of importance at this time is the paper to be given by Theron Wasson, chief geologist of the Pure Oil Co., on "Geological Occurrence of Oil and Gas in Illinois." B. F. Hake, Gulf Oil Corp., will speak on the same topic as it applies to Michigan. Others will discuss geology of Eastern fields and geophysical work in the Appalachian region.

R. W. Clark, Gulf Oil Corp., Pittsburgh, is chairman of the general committee which is arranging for the meeting and J. French Robinson, Peoples Gas Co., heads the arrangements committee.

* * *

Commission Hears Charges

Inside the non-air conditioned state capitol at Oklahoma City, the Oklahoma Corporation Commission, its attorney, its proration agents, the attorneys and several officials of the Skelly Oil Co. met last Tuesday to take up the charge made by one Lon Turk, a Skelly employe who was discharged some time back.

His charge, briefly, was that the Skelly company had doctored its potential gauges in the Fitts pool by adding some oil to what certain wells made on their official test. To this the Skelly company retorted that the gravity flow tankage which Turk said was used to bolster potentials contained oil used in acidizing operations. The tanks and flow lines, said company witnesses, were in plain sight of everybody and there was no need for anybody's being in doubt about the matter.

The affair droned on for four days in the 100 degree plus weather and public apathy was terrific. The commission was to retire and make its findings in a cooler spot, if it could find one.

* * *

Reassurances from Texas

Col. Ernest O. Thompson, member of the Railroad Commission of Texas, has spoken out concerning the current high rate of production. Criticisms have been made concerning the Texas allowable for August, which started off at more than 1,500,000 barrels and is going up each day as oil wells come in.

The Colonel asserted at Austin Thursday that the commission is in close touch with the situation and that it is prepared to take speedy action whenever supply becomes too great. He indicated pointedly that the September allowable may be reduced below the August figure.

* * *

'Charlie' Brown Tax Commissioner

Back about war time, Charles C. Brown, federal oil and gas supervisor in the Osage reservation, was borrowed by Gov. R. L. Williams, Oklahoma, to advise the state on the value of school land leases. His report caused the Marland Oil Co. to pay about a half million dollars more than it hoped to; but his ability was thus brought to E. W. Marland's attention.

Last Friday, Gov. E. W. Marland appointed "Charlie" Brown the tax commissioner of Oklahoma, succeeding the late H. L. McCracken. Between these events is a long association — almost a continuous one — between the governor and Brown. The latter entered the employ of Marland in 1919, rose rapidly in the organization to vice-presidency and manager of all producing activities in the Marland companies and for a time was general manager of the entire company.

He was assistant proration officer of Oklahoma for a couple of years, then was appointed member of the tax commission, a three-man board. The 1937 legislature made it a one-man commission and Brown has been technical advisor to the Interstate Compact Commission since.

He is widely known in the oil industry. He knows its problems and while nobody need expect special advantages, everybody can expect fair treatment. And he does not subscribe to the theory that oil should pay all the cost of government.

Black Gold Festival Days Set By Governor

LOS ANGELES, Aug. 9.—A proclamation declaring Sept. 18 and 19 as California's Black Gold Festival days was issued recently by Gov. Frank F. Merriam, in connection with the Pacific Oil Show and Black Gold Festival to be held at Taft, Cal., Sept. 16 to 19.

Final plans for buildings and entertainment are being worked out by the executive committee composed of C. A. Williams, president; H. G. Nelms, secretary; and C. E. Triplett.

On the advisory board are Angus Crites, president, Anchor Oil Co., and California representative for the Independent Petroleum Producers Assn. of America; V. G. Hutchin, head of Jameson & Ruby Oil Cos.; Thomas McManus, president, McManus Oil Co. and secretary of the California Independent Oil Producers Assn.; Henry Morris, Wilbert Oil Co.; Charles Murray, U. S. Geological Survey and president of the Petroleum Club; C. N. Nickerson, officer, U. S. Naval Reserve in charge of U. S. Government oil lands; William J. Schultz, president, Crescent Oil Co., Vista Grande Oil Co. and Wilmax Oil Co.; and Stanley Abel, Kern County supervisor.

The oil show has been incorporated as a non-profit organization solely to stage the exposition. It is planned to be held on alternate years with the Tulsa exposition.

Valvoline Hearing Postponed

WASHINGTON, Aug. 9. — Hearings on the contention of Valvoline Oil Co. that its pipeline properties are not operated as those of a common carrier in interstate commerce, and hence are not subject to valuation orders of the Interstate Commerce Commission, will be held here Oct. 12, the commission has announced. Previously they were scheduled for Sept. 15.

New Plan to Compensate Truckers On Difficult Route Planned in West

N. P. N. News Bureau

LOS ANGELES, Aug. 7. — When is a mile more than a mile, was to be under discussion before the California Railroad Commission at a hearing in Los Angeles Aug. 10, in connection with the proposal to establish a new "constructive mileage" table to apply on highway transportation of bulk refined petroleum products by common and contract carriers.

California marketing companies are interested in this hearing as it may affect rates on the large bulk movement of gasoline in tank truck and trailer and semi-trailer lots within the state. Petroleum marketers in other areas are watching developments because of the possible extension of the idea to other states.

The term "constructive mileage" is used here to mean the increase in actual highway mileage which must be added to compensate for adverse physical conditions on the highways, such as grades, curves, traffic signals, congestion, road bed and surface, and other factors which add to the cost of truck operation over and above the normal expense of operation where these conditions are not present.

Need for a constructive mileage table goes back to the decision of the California Railroad Commission last November, which established rates on refined petroleum products on the basis of cents per 100 pounds for fixed mileages.

Predicated upon cost data, the rates were determined by the commission as the minimum necessary to return to the highway contract and radial highway common carrier the full cost of operations. Two sets of schedules were set forth by the commission; one for the trucks and one for the rails. A distance of about 290 miles was recommended as the economic limit for truck operation.

290-Mile Breaking Point

That is, below this distance, rates on the truck schedule were lower than on the rail schedule and beyond this distance the going rates favored the rails. However, each type of carrier could meet rates recommended for the other and the logical outcome was that rails met the truck rates on distances up to 290 miles and truck met the rail rates for greater hauls.

With rates based on mileage covered in the haul there was need for a method of compensating the trucker operating under adverse highway conditions for his higher cost of operation. That is, "constructive mileage" tables.

In the coming hearing, the commission is to consider criticism of a detailed method of calculating constructive mileage as proposed in a report sent to all interested parties. This new plan would supersede the temporary arrangement outlined in an earlier decision of the state commission.

This early rather general plan, which was in harmony with the practice employed by rail carriers, classified public highways in California into two geographic groups or zones. One of these was referred to as "valley" territory, and the other as "penalty" territory, which embraced that part of the state not designated in the "valley" zoning.

In calculating constructive mileage tables under this plan, the commission ordered that actual mileage should be used for setting rates on commodities transported over "valley" highways, but, over highways outside the prescribed valley territory, rates were to be based upon 150 per cent of the actual road mileage in that district.

While it was recognized at the time that this plan did not contain the refinements presented by other suggested methods of arriving at constructive mileages, it did fill an immediate need until a more detailed plan could be worked out.

Three Plans Offered

The current report points out that three general plans of procedure for determining constructive mileages were offered in the form of exhibits, each of which was based largely on the theory that the cost of truck operation per mile and, consequently the constructive mileage, varies inversely with the different speeds at which a vehicle normally operates over various highways with different grades and other physical conditions which affect the rate of travel.

One of these plans — all three were either introduced as exhibits or were discussed in a former case before the California commission — sets forth in detail a method of determining constructive mileage for any highway where certain physical conditions are known. It is based on the fact that there is a definite relation between the speed at which a truck will normally travel over a straight, level road, without traffic congestion, speed restrictions and stop signals, and the speed at which it will travel with the same load over other highways with varying conditions of traffic interference.

This exhibit gave the results of actual field tests with varying types of vehicles and loads under different highway conditions as evidence of the important effect of adverse highway conditions on average truck speeds.

A second exhibit was introduced by Valley Motor Lines, Inc., as a logical method of calculating constructive mileage. It was based on the theory that, where a truck is operated at full speed or a constant R.P.M., the cost per mile of operation over different highways under varying conditions is directly proportional to the time consumed.

That is, the cost of operation for one hour over a level highway would be the same as for one hour's operation over a mountainous road, provided the motor were operated at full speed in each case, or a constant R.P.M.

Variable Costs

The third offering came from C. G. Anthony, on behalf of Pacific Tank Lines, Inc. It suggested a method of determining the added costs of operating over a mountain road, as compared to the costs over a level road for any given distance.

The suggestion was that the extra time in hours required to travel over the mountainous highway, as compared to the straight level roadway, should be multiplied by the average fixed cost of truck operation on an hourly basis. To this should then be added the product of the length of the mountainous road in miles times a selected constant for a particular speed.

This constant was declared to vary from 5 cents per mile for a speed of 6 miles per hour, to 2 cents per mile for a speed of 13 miles per hour. The final result, in the opinion of the author, was offered as representative of the correction or increment to be added to the cost of operation over a level road for a given distance in arriving at the cost of operation in "penalty" areas.

In its consideration of the matter the commission pointed out that, while there will be a material variation in the speed at which different trucks will travel over a certain grade, there is a definite relationship between the gradient and the type of truck operated.

The California Railroad Commission's report says the fact that a grade will have less relative effect on the speed of a light truck than a heavy one is offset to some extent by the fact that the heavy one is carrying a correspondingly greater load. In view of this, the report suggests that the method of establishing constructive mileage should be based on an average size truck operating under normal conditions.

Problem of Grades

The question of comparative cost of truck operation going up a grade, as compared with going down, is settled for the purpose of the report by assuming that the effective cost is the same in both cases. The slight operating saving in fuel traveling down grade is thought offset by added maintenance cost to the equipment — particularly the braking system — on the down hill run.

With reference to the question of calculating constructive mileages to apply to truck transportation through congested areas, where the normal rate of travel is reduced by other traffic on the highway, speed restrictions and stop signs, the most variable and important element for determination was believed that of comparative speeds under various operating conditions.

Tests were declared to show that congestion reduces truck speed in amounts varying from 10 to 50 per cent, as compared with normal operation. The majority of results, however, indicated a speed reduction of 10 to 20 per cent.

The average operating speed for all truck movements on a level open highway was established as 23.5 miles per hour, on the basis of field tests and a study of truck schedules. The average transportation cost per ton mile, at a speed of 23.5 miles per hour, was determined from cost exhibits as 2.92 cents per ton mile.

The constructive mileages were then determined for various speeds by dividing the corresponding total transportation costs per ton mile in cents by

the base figure of 2.92. In order to provide a ready means of determining the cost of truck transportation at any particular speed between the practical limits of 4 to 23.5 M.P.H., the figures were plotted representing the estimated cost of truck transportation at certain selected speeds.

The result approached a parabolic curve. A formula was then developed to apply to this curve so that constructive mileages could be determined for the average speed of truck travel on any particular highway. The formula is:

$$\text{Constructive Mileage Ratio} = \frac{(23.5 - \text{speed in M.P.H.})^2}{200} + 1$$

In view of the fact that grades constitute the greatest single factor, and, in the majority of cases, the controlling factor in determining constructive mileages, the report offers a table showing the constructive mileage ratio for various highway grades expressed in difference in elevation in feet per mile, as shown by the highway profile.

With the use of this table, constructive mileage between any two points may be determined by multiplying the length of the various sections with different grades by the corresponding constructive mileage ratio, and then summing up the products. This table applies to non-congested territory only.

Where truck operation involves added expense due to ferry haul or passage over toll bridge or a toll highway, the report suggests that added mileage should be allowed to compensate for such extra charges, together with proper compensation for any other changes in transportation costs.

"For example", the report says, "where the operation involves a ferry haul, no allowance should be made for accounts which are directly assignable to operating costs; other charges, however, which are based only upon the time element, including standby charges and overhead costs, should be allowed.

Bridges Allowed For

"Accordingly, constructive mileage equivalents have been computed to compensate for such operation over toll bridges and ferries. The transportation costs employed herein are based upon what is considered an average operation, that is, a 15-ton truck unit carrying a 7½-ton load."

In conjunction with its report the commission has compiled a map of California highways showing the determined constructive mileages between selected points. It suggests that this map should be used in calculating mileage tables or for prescribing future rate structures based upon length of haul.

The commission says it now has under way the preparation of a mileage table showing the constructive mileage distance between all incorporated cities in California, as well as between certain other selected points, important from a distance-table standpoint. This mileage tabulation is based on the map.

As an example of the constructive mileage application, the regular wheel mileage from the San Francisco supply area —which includes Oakland, Richmond, Avon, Martinez and other refining points in that locality —is 77 miles. Taking into account bridge tolls, the constructive mileage between these two points would be 97.5 miles. This would raise the rate on gasoline from 10.5 cents to 13 cents per 100 pounds, it is said.

Reports from here and there indicate there will be considerable opposition to the commission's proposed method for determining constructive mileage when the hearing gets under way next week.

ICC Denies Oil Trucker Right To Carry Round-Trip Freight

N. P. N. News Bureau

WASHINGTON, Aug. 9. — A Colorado oil trucker who sought to make his trips profitable in both directions by hauling canned goods and fresh vegetables from the Colorado foothills to Kansas refinery points, in addition to trucking gasoline, kerosine and distillate from the refineries back to Colorado, has been denied the extra business.

The Interstate Commerce Commission, following out the recommendations of a joint board which held hearings on the application of Triangle Motor Co., Brighton, Col., for a contract carrier permit, has granted the company permission to carry the petroleum products, but denied permission to carry canned goods and fresh vegetables.

Triangle, according to the commission's report, first started bringing petroleum products from the Kansas refineries to supply its storage tanks at Brighton to meet competition of other wholesalers. The company testified it had saved one cent a gallon on transportation cost over rail freight by this method.

Other companies, hearing of this saving, made arrangements with Triangle to bring them in supplies, and under this plan several trips were made between the Kansas points and Ft. Collins, not far from Brighton. However, Triangle discovered it was violating the Motor Carrier Act, and discontinued the operation, the report points out.

It was then the application was made for the permit to allow the "two-way" operation, which included carrying the canned goods from a cannery near Brighton and fresh vegetables from nearby truck gardens to the Kansas points, on the trips back for gasoline and kerosine.

Arrangements were made with the cannery to carry its goods to the Kansas customers and the plan was to purchase the fresh vegetables from growers and sell them at destination points.

Testimony was given at the hearing before the joint board by operators of a Ft. Collins garage for which Triangle had carried petroleum products during its earlier operations. The operators said Triangle gave them 48-hour service, as against the five or six days required for rail shipment of petroleum products from the same points.

In ruling against the application as it concerned operations other than carrying petroleum products, however, the commission held that the proposed transportation of canned goods to Kansas consignees from the cannery would be in the nature of a common carrier operation, since the cannery, in arranging for Triangle to transport the goods, would merely be acting as a broker for the consignees.

Insofar as the carrying of the fresh vegetables which it had purchased and would sell is concerned, the ICC ruled that this "probably" would be a private carrier operation, and not subject to its jurisdiction. If, however, the transportation is performed for "compensation as a common or contract carrier" — that is, if the vegetables are purchased on order for Kansas consignees — then another application would have to be made covering this type of operation.

Triangle told the commission it has a specially-built, flat-top tank, fitted with a stake body, on which it proposed to carry the canned goods and fresh vegetables on the way east from Colorado.

Haulers Barred From New Wells, Carrier Contends

By Teletype
N. P. N. News Bureau

WASHINGTON, Aug. 3. — Union City Transfer, Beaumont, Texas, oil well supply trucker, has filed a brief in support of its exceptions to a report and recommendation made to the Interstate Commerce Commission by a joint board which held hearings on its application for a common carrier certificate several weeks ago.

The trucker applied for a certificate, under the "grandfather clause" of the Motor Carrier Act, which would allow it to haul between points "throughout" the states of Texas and Louisiana.

According to the brief, the joint board recommended that the certificate be granted covering only those points to which the trucker hauled prior to June 1, 1935. This date marks the dividing line between "grandfather clause" operation of trucks and "new operations," to which different regulations apply.

Union City Transfer contends it was hauling to all known oil fields in the two states prior to June 1, 1935, but that, if the report of the joint board is accepted by ICC, it will be prohibited from carrying equipment to Rodessa oil field and others brought into production since that date.

Speed Necessary

The brief cites the need for speed in hauling equipment to oil wells at vital moments, and points out that Union City would have to get a "new operations" certificate for each field that was brought in or to which it was called upon to haul equipment, if it were restricted to points to which it had hauled previous to June 1, 1935.

It contends it covered virtually all of the two states where oilfield equipment was needed prior to that date, and that its operations under the "grandfather clause" certificate should include operations "throughout" the states.

"If, prior to hauling to a new point in Texas or Louisiana, a carrier of oilfield equipment had to obtain a certificate from this commission, then the oil industry would be seriously hampered. . . .as no other carrier could perform the service, because special transportation equipment is necessary," the brief contends.

Court Decision On Pipeline Tax

WASHINGTON, Aug. 9. — Crude oil transported by pipeline from flow tanks adjacent to wells to storage tanks adjacent to a refinery is taxable, even though the distance is negligible, under a decision of the U. S. District Court, Southern Division, for Northern District of California.

The Mohawk Petroleum Co., plaintiff, sought exemption from Section 731 (a) of the 1932 Revenue Act, which levies a tax upon transportation of crude petroleum by pipeline.

The court held that transportation incidental to production was tax free (as from well to flow tank); that transportation incidental to refining (as from refinery storage tank to refinery) was tax free; but that movement in a gathering line from a refinery to an oil field or pool is taxable. Mohawk's gathering line was about one-quarter mile long.

"As all oil is transported to a market," the court held, "it follows that a tax must be payable when that transportation, regardless of the distance covered, is accomplished by pipeline."

Ethyl Plant Completed

BATON ROUGE, La., Aug. 7. —An addition to the new Baton Rouge plant of the Ethyl Gasoline Corp., doubling its capacity, has been completed, according to the State Board of Industry and Commerce here. Since last October, the company has spent $3,759,000 in this plant and equipment, the board says.

DAILY AVERAGE PRODUCTION IMPORTANT DISTRICTS
American Petroleum Inst. Figures

	Week Ended Aug. 7 Barrels	July 31 Barrels
Oklahoma City	173,250	153,750
Total Okla.	654,100	637,650
East Texas	470,600	470,800
Total Texas	1,479,050	1,433,000
Rodessa	50,000	51,250
Total La.	262,200	264,050
California	670,500	659,600
E. of Rockies	3,080,650	2,932,300
Total U. S.	3,651,150	3,591,900
Crude Imports	75,145	145,570
Tot. new sup'ly	3,726,295	3,737,470

Fusion Welded Cars

N. P. N. News Bureau

WASHINGTON, Aug. 10.—General American Transportation Corp. today was granted authority by Interstate Commerce Commission to construct for Sun Oil Co. 25 tank-car tanks by the fusion welding process for experimental service in transportation of propane, butane and similar petroleum products.

Unless specific authority is granted by the commission, specifications for such tanks call for construction by forge-welding.

Panama Canal Cargoes Of Oil Decline

N. P. N. News Bureau

WASHINGTON, Aug. 9.—Approximately 1,600,000 barrels of petroleum products were shipped through the Panama Canal from Pacific to Atlantic ocean during the month of June, according to the Panama Canal Record, compared with more than 1,900,000 barrels in the same month last year.

Traffic in petroleum and its products from Atlantic to Pacific also showed a decline in June, compared to June a year ago, the record shows, dropping from about 463,000 barrels last year to about 425,000 in June, 1937. Most of this east-to-west traffic is in lubricating oils and greases and gas and fuel oil.

Chief Pacific-to-Atlantic traffic on June this year was in crude oil, amounting to about 805,000 barrels. Next in order was the grouping "gasoline, benzine and naphtha," which accounted for about 450,000 barrels of the west-to-east traffic.

Motor Fuel Stocks in Largest Cut Of Any Week For This Year

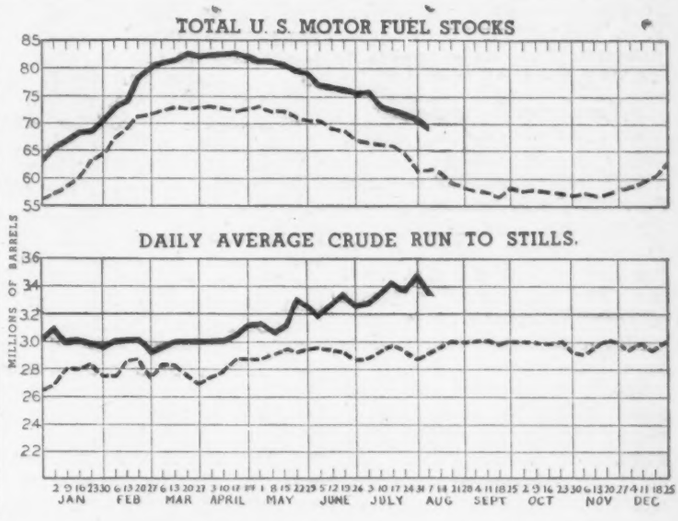
N. P. N. News Bureau

NEW YORK, Aug. 10.—A decrease of 1,588,000 barrels in motor fuel stocks in the U. S., the largest to date this year, bringing stocks down to 65,476,000 barrels the week ended Aug. 7, marked last week's refinery operations, according to the American Petroleum Institute. Motor fuel stocks declined 1,088,000 barrels the previous week.

Crude runs to refinery stills were lowered 99,000 barrels daily to 3,037,000 barrels daily average the past week. Operating capacity was cut to 83.1 per cent, from 86 per cent the week before. Four districts lowered their runs in fairly large amounts, these being East Coast plants, which cut 36,000 barrels; Indiana-Illinois-Kentucky, 32,000 barrels; Oklahoma-Kansas-Missouri, 53,000 barrels and Texas Gulf 28,000 barrels. California plants increased runs 26,000 barrels.

The largest decline in motor fuel stocks was in the Texas Gulf district. Here stocks were lowered 1,068,000 barrels. Other sizable declines were: 231,000 barrels, Oklahoma-Kansas-Missouri; 107,000 barrels, Appalachian; 174,000 barrels, Indiana-Illinois-Kentucky; 145,000 barrels, Inland Texas and 158,000 barrels, California. Only two districts reported increases, these being East Coast, where stocks rose 322,000 barrels, and Louisiana Gulf where they gained 28,000 barrels.

Motor fuel stocks at refineries totaled 34,966,000 barrels on Aug. 7, an increase of 1,860,000 barrels from July 31. In-transit and terminal stocks increased 394,000 barrels, to 23,279,000 barrels, and unfinished gasoline stocks totaled 7,231,000 barrels, an increase of 100,000 barrels.



CURRENT REFINERY OPERATIONS

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks Thousands of Barrels Total Finished and Unfinished Motor Fuel*		Total Finished Gas & and Unfinished Fuel Oil		% Total Capacity Reporting	'Cracked Gasoline Production Daily Av. Production (Barrels) Week Ended	
		Aug. 7	July 31	Aug. 7	July 31	Aug. 7	July 31	Aug. 7	July 31		Aug. 7	July 31
East Coast	100.0	548,000	584,000	81.9	87.3	18,438	18,116	11,984	11,394	100.0	116,000	123,000
Appalachian	88.4	102,000	111,000	79.1	86.0	2,728	2,835	875	870	94.6	28,000	29,000
Ind., Ill., Ky.	92.4	429,000	461,000	88.5	95.1	11,673	11,847	6,593	6,564	98.5	138,000	138,000
Okla., Kans., Mo.	84.6	294,000	315,000	77.4	82.9	6,836	7,067	3,319	3,323	90.3	79,000	78,000
Inland Texas	56.6	123,000	129,000	61.2	64.2	1,889	2,034	1,646	1,624	71.7	36,000	36,000
Texas Gulf	95.5	719,000	747,000	95.0	98.7	7,821	8,889	9,030	8,985	98.0	147,000	174,000
La. Gulf	96.3	160,000	149,000	95.2	94.3	1,820	1,792	2,412	2,570	100.0	28,000	25,000
No. La., Ark.	63.7	35,000	38,000	60.3	65.5	469	473	408	414	77.5	8,000	7,000
Rocky Mt.	69.7	58,000	59,000	93.5	95.2	1,501	1,530	791	790	85.4	14,000	12,000
California	90.9	569,000	543,000	76.3	72.8	12,301	12,459	68,709	68,955	98.0	82,000	86,000
Total Reporting	88.9	3,037,000	3,136,000	83.1	86.0	65,476	67,042	105,767	105,489	94.8	676,000	708,000
Estimated U. S. Total (Bur. of Mines Basis)		3,340,000	3,425,000			69,216	70,872	108,597	108,209		745,000	775,000

*Includes stocks at refineries, in bulk terminals, pipe lines and in transit.

Flood Loss Cut Ashland Profit

CLEVELAND, Aug. 9.—Ashland Oil & Refining Co. and subsidiaries report, for six months ended June 30, 1937, net profit of $285,602, after depreciation, depletion, federal and state income taxes. This is equivalent, after dividends of five per cent on preferred stock and minority interest in subsidiaries, to 29 cents per share on 958,990 shares of common.

This compares with 34 cents last year. Paul G. Blazer, president, attributed the current loss to flood losses amounting to more than $75,000, or approximately 7.5 cents per share.

"Profits from our increased volume of business this year would have offset our flood losses except that retail gasoline prices in Ohio, which is our principal marketing territory, have not been advanced to reflect the general increase in crude oil prices," he told stockholders. "We produce from our own wells approximately 30 per cent of the crude oil requirements of our refineries, purchasing the balance from producers whose wells are served by our own pipeline system."

Pure Builds Loading Rack in New Field

CHICAGO, Aug. 10. — The Pure Oil Co. is building a tank car loading rack near Noble, Ill. to transport crude oil to the Heath, (O.) refinery. Pure is drilling near Noble adjacent to territory where other companies have brought in producing wells.

Land was purchased last week for the rack, and equipment will be assembled this week.

Tide Water Net Gains 45% for Six Months

CLEVELAND, Aug. 9.—Current assets of the Tide Water Associated Oil Co. and subsidiaries as of June 30, 1937, including $15,583,238 cash and marketable securities, amounted to $59,762,679 and current liabilities were $15,876,636. A year ago, cash, government securities and other marketable securities were $9,654,710, current assets were $51,791,980 and current liabilities were $14,988,265 as of June 30, 1936.

Net income amounted to $7,696,701 for the first six months of 1937, more than 45 per cent greater than for the same period of 1936, the company reported. Earnings, on a per common share basis, amounted to 99 cents for the first half, as compared to 60 cents for 1936 comparable period. This increase the company attributed to increase in sales volume, unit realizations and to the increase in net production of crude oil.

Total sales of crude oil, fuel oil, gasoline and other products aggregated nearly $70,000,000 an increase of 24 per cent. The net production of crude oil totaled 10,706,134 barrels, an 8.1 per cent increase.

Calls Tax Threat To Full Payroll

PHILADELPHIA, Aug. 9.—The threat of the undistributed profits tax to the carrying of full payrolls by industrial concerns during periods of depression is brought out in a letter sent to Senator James J. Davis of Pennsylvania by George Blair of Philadelphia, National Foam System, Inc.

Blair said his company depleted its surplus to maintain its force at near 1929 wage levels from 1930 on, and that the present law penalizes it for attempting to create a surplus to meet future unforeseen contingencies. His letter stated:

"I hesitate to add an additional burden at the conclusion of the strenuous battle you have been waging on the subject of the packed court. There is one situation existing today which must be remedied if I personally expect to stay in business; namely the *"Undistributed Profits Tax Law."*

"My company entered the year 1930 with a comfortable surplus. In the succeeding several years this surplus was dangerously depleted, due to the fact there were no earnings and also to the fact that we maintained our full force at practically 1929 wage levels. You may logically ask, "If business were at such a low level why did you need your 1929 force?" The answer is: We did not need them, however, we recognized that collectively they had made possible our surplus and that we had a definite obligation to see that their pantry shelves were not bare.

"Under the present law we are to be penalized for creating a surplus to enable us to withstand future business recessions or unforeseen contingencies to which any business is subject. God help the poor squirrels if Mr. Roosevelt finds out that they lay up a surplus to carry them through the winter."

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We May Really Utilize Natural Gas Hydrocarbons—Some Day

By ARCH L. FOSTER, Technical Editor

Less than two years ago the writer was asked by a considerable number of natural gasoline industry executives if, in his opinion, gas polymerization meant the decline and fall of the natural gasoline industry. The questions were asked Oh, very seriously indeed, since this new process, in its commercial infancy appeared to offer possibilities for both good and evil to that industry. The answer was in the negative but not too positive; too great a gap then existed between technical possibilities and economic and commercial practicabilities.

Within the year the first major step has been taken to utilize on a relatively large commercial scale a portion of the natural gas hydrocarbons which formerly have been used as plant fuel at extremely low price or for domestic fuel at fuel gas prices—referring to propane and butane. By combining individual plant production in a prolific field, these hydrocarbons, especially butane, are concentrated at Humble's Baytown plant for conversion to motor fuels with particularly high value especially in anti-knock ratings.

Thus the application of polymerization to natural gas and gasoline points the way to conservation of the most practicable type, the conversion of a well-nigh waste product to a material for which an almost unlimited market exists.

The same thing is occurring in Shamrock's thermal cracking, catalytic polymerizing unit in the Panhandle. Phillips, and others are doing more of the same by one process or another. Plans are being studied in California to carry out more or less similar methods, without at this writing any information being available to indicate what steps may be taken there.

These activities are the first answer of current history to the anxious question of two years ago. The natural gasoline producer is recovering more profitable and usable material, and receiving pay for it, than he formerly thought possible. For every molecule of butane or propane converted to an eight- or a six-carbon molecule of motor fuel another molecule of the same will be required to maintain or increase the volatility of the finished fuel. The recovery of these hydrocarbons from gas will therefore be increased by approximately the amount of propane-butane used for polymerization. It will require a huge amount of that sort of thing to hurt the natural gasoline people.

These are the immediate returns, from one process developed by the researchers. But to most research men this is a mere bagatelle, a prosaic method to pay the costs of real investigation, to make possible really major advances in the science and art of utilizing petroleum.

Look at some of the products that are not only possible but practicable and in some cases actual, from hydrocarbons. Ethane for example; polymerizable to aromatic as well as non-aromatic fuels of the gasoline range; reduced to ethylene it gives glycol, already widely used; solvents, and innumerable chemical derivatives too numerous to mention but many already in demand in large quantities. Propane, again; an intriguing list of alcohols, of ethers as i-propyl ether of high octane rating for super-fuels; ketones, for solvents and chemical intermediates, acids, and esters galore, of which only the organic chemist is aware. Butane, for a longer list of alcohols, acids, ketones, ethers; for iso-octane, for synthetic rubber, synthetic plastics, explosives, etc. So the list can go on, becoming more complex as molecular weight of the hydrocarbon increases. Many of these are now made commercially in Oklahoma, in West Virginia, and possibly elsewhere.

Yes, the natural gasoline industry is not due for extinction.

Refining Technology

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By reforming the optimum percentage of straight-run gasoline and leading the entire production of gasoline, a 5000-barrel per day reforming unit will produce $515,000 more revenue per year, these author-engineers calculate, than can be obtained from fuel which is leaded but not reformed.

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A complete producing, transporting, refining and sales organization is nearing completion, to prepare Talco crude for market. Gasoline and asphalt will be major products of this plant.

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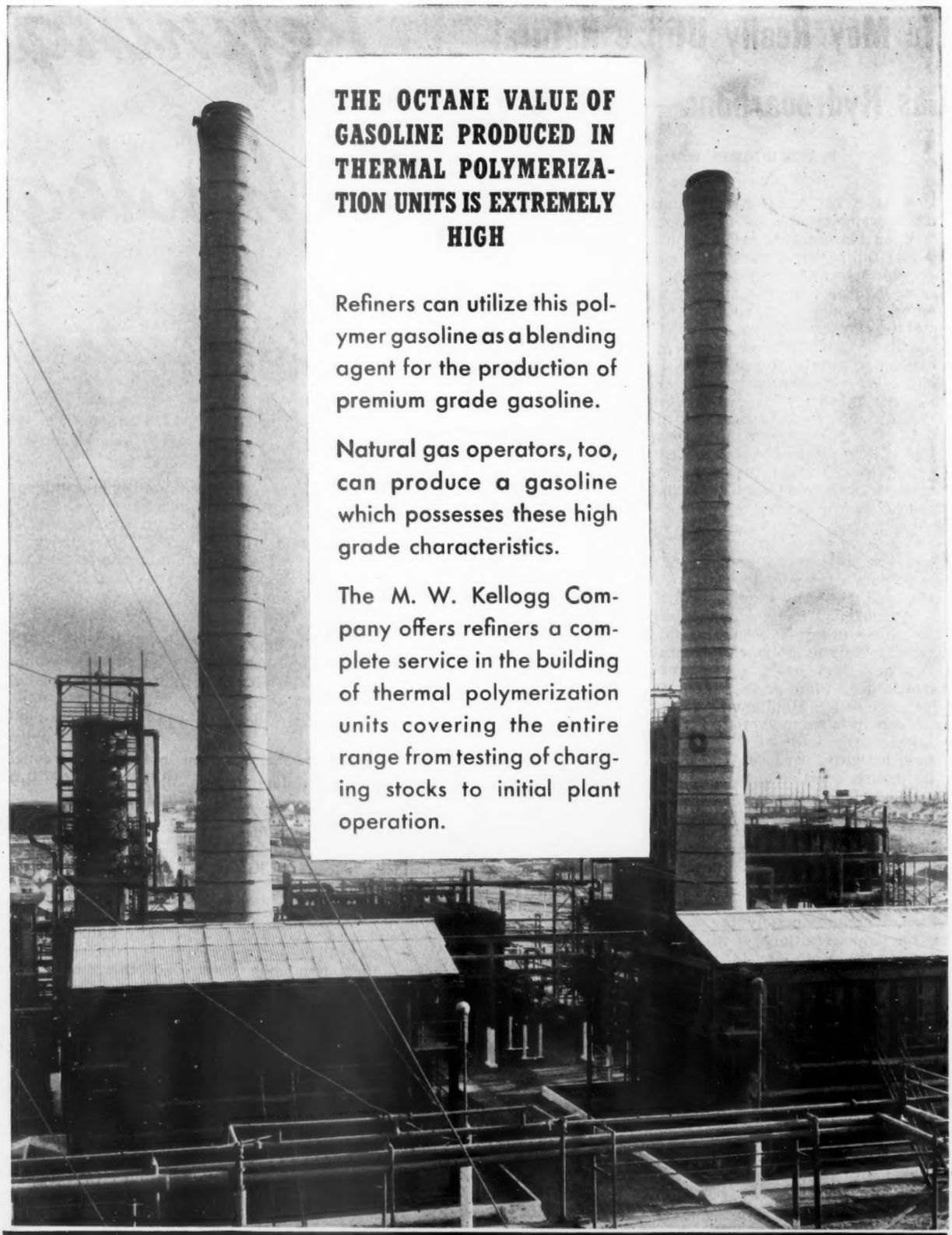

THE OCTANE VALUE OF GASOLINE PRODUCED IN THERMAL POLYMERIZATION UNITS IS EXTREMELY HIGH

Refiners can utilize this polymer gasoline as a blending agent for the production of premium grade gasoline.

Natural gas operators, too, can produce a gasoline which possesses these high grade characteristics.

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Economics of Reforming and Leading Mid-Continent Gasoline*

By WRIGHT W. GARY[1] and N. R. ADAMS[1]

● In every refinery the operator must arrive at a decision as to how much cracking, reforming, and leading must be done, to produce the desired quality of motor fuel at the lowest cost; these decisions vary in each plant because of variation in conditions obtaining in each.

These authors set up an equation, with practical values assigned to the different variables involved, from which may be calculated the percentage of naphtha which shall be reformed, and how much leaded, to produce fuel of a given octane number. Fifteen charts are shown, which can be used to arrive at values agreeing with individual conditions in any refinery, based on Mid-Continent charging stocks and operating conditions.

Increased annual revenue obtainable by selecting and using these optimum conditions varies, according to their calculations, from $365,000 for 70 octane number by the Motor Method, to $515,000 for 73 octane number by the "Tentative New Method" at the time this was written.

This method, known as the L-3 Method, has been adopted since the writing of this article, to become effective for Ethyl licensees Sept. 1.

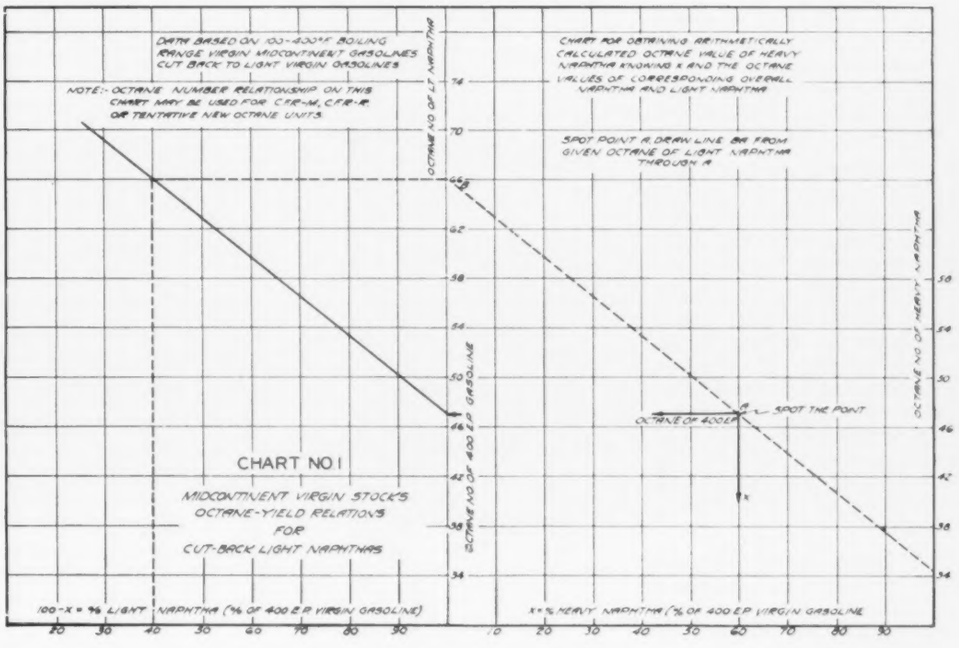
ONE of the most important problems confronting the oil refiner for the past few years has been the production of high octane number gasoline. One major factor affecting the octane number of the overall refinery gasoline product is the octane of the straight run produced from the crude. Cracked gasoline produced by modern cracking methods is generally sufficiently high in octane to present no problem.

The production of a high octane number product from a low octane number straight run may be accomplished by two principal methods, namely, (1) naphtha reforming, and (2) the use of tetraethyl lead. Either of the two methods alone can produce the desired octane number.

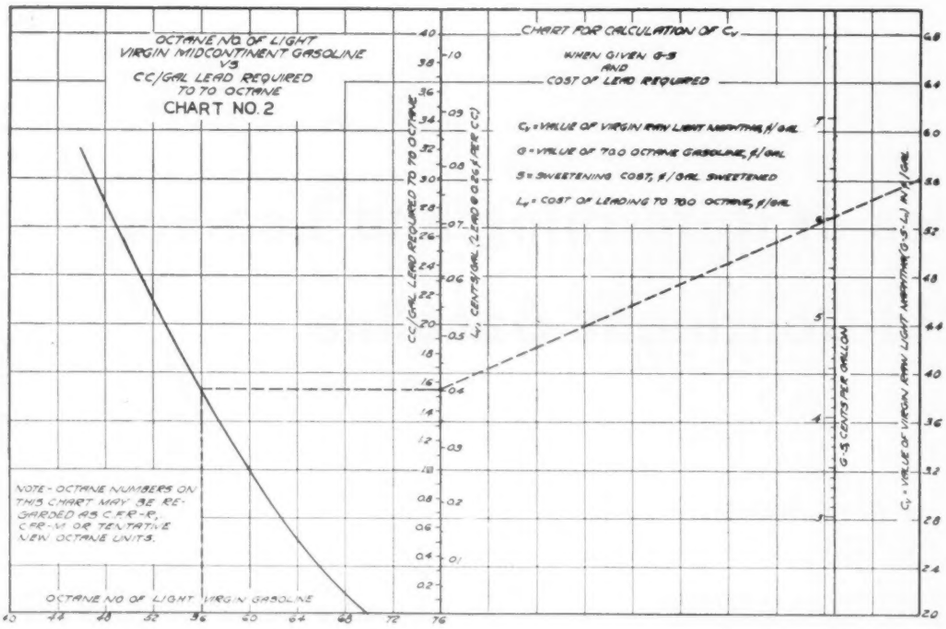
It is the purpose of this paper to present a method for economically appraising both methods of octane number improvement, and further, to combine both methods and establish optimum conditions of reforming which will produce the desired octane number at a minimum expenditure to the refiner.

In recent months, considerable research has been conducted by oil and motor industries in co-operation with the Ethyl Gasoline Corp. to improve methods of octane rating which will compare more favorably with road performance. Also, the tendency has been continuously toward higher levels. At the time of the preparation and calculation of the contents of this paper, new standards have not been definitely established, but as a preview of the effect of possible changes of octane rating tests and elevation, an attempt has been made, as a part of this paper, to apply and predict the economics and costs of such proposed changes to the refiner. It has been assumed for this appraisal that a new tentative method will be midway between the present research and motor octane ratings, and that the adopted octane number elevation will be 73[2].

It should be stated as a preface to the following studies, that the results must be considered quantitatively for each local


DATA BASED ON 100-400°F. BOILING RANGE VIRGIN MIDCONTINENT GASOLINES CUT BACK TO LIGHT VIRGIN GASOLINES
NOTE:- OCTANE NUMBER RELATIONSHIP ON THIS CHART MAY BE USED FOR C.F.R.-M, C.F.R.-R OR TENTATIVE NEW OCTANE UNITS.
CHART FOR OBTAINING ARITHMETICALLY CALCULATED OCTANE VALUE OF HEAVY NAPHTHA KNOWING X AND THE OCTANE VALUES OF CORRESPONDING OVERALL NAPHTHA AND LIGHT NAPHTHA
SPOT POINT A, DRAW LINE BA FROM GIVEN OCTANE OF LIGHT NAPHTHA THROUGH A
OCTANE NO OF L.P. NAPHTHA
OCTANE NO OF 400 E.P. GASOLINE
OCTANE NO OF HEAVY NAPHTHA
OCTANE OF 400 E.P.
SPOT THE POINT
CHART NO I
MIDCONTINENT VIRGIN STOCKS OCTANE-YIELD RELATIONS FOR CUT-BACK LIGHT NAPHTHAS
100-X = % LIGHT NAPHTHA (% OF 400 E.P. VIRGIN GASOLINE)
X = % HEAVY NAPHTHA (% OF 400 E.P. VIRGIN GASOLINE

*W. P. R. A., 1937.
[1]M. W. Kellogg Co.
[2]New Method L-3 adopted since this was written—Ed.


OCTANE NO OF LIGHT VIRGIN MIDCONTINENT GASOLINE VS CC/GAL LEAD REQUIRED TO 70 OCTANE
CHART NO. 2
CHART FOR CALCULATION OF Cv WHEN GIVEN G-S AND COST OF LEAD REQUIRED
Cv = VALUE OF VIRGIN RAW LIGHT NAPHTHA, ¢/GAL
G = VALUE OF 70.0 OCTANE GASOLINE, ¢/GAL
S = SWEETENING COST, ¢/GAL SWEETENED
L1 = COST OF LEADING TO 70.0 OCTANE, ¢/GAL
NOTE - OCTANE NUMBERS ON THIS CHART MAY BE REGARDED AS C.F.R.-R., C.F.R.-M. OR TENTATIVE NEW OCTANE UNITS.
OCTANE NO OF LIGHT VIRGIN GASOLINE
CC/GAL LEAD REQUIRED TO 70 OCTANE
L1, CENTS/GAL. (LEAD @ 0.26 ¢ PER CC)
G-S CENTS PER GALLON
Cv = VALUE OF VIRGIN RAW LIGHT NAPHTHA (G-S-L1) ¢/GAL

refining problem, and certain assumptions were necessary to simplify the calculations. In general, it is felt that these assumptions are minor in economic effect for a given overall result, and in specific instances can be definitely and quantitatively appraised and then added to or subtracted from the results presented to give a true appraisal. Such refinement of the calculations must necessarily be applied by each refiner to conform to his local conditions. The assumptions used in this work were as follows:

1. Evaporation and sweetening losses shall be held negligible;

2. The octane number and leading characteristics of a gasoline, whether sweetened or unsweetened, shall be considered identical;

3. Reforming cost shall be assumed as 0.2c/gal. charged to the reformer. Fixed charges and royalty costs shall be omitted from consideration;

4. Sweetening cost shall be assumed as 0.05c/gal. of gasoline sweetened;

5. Virgin 100° to 400°F. Mid-Continent base stock shall require no other treatment than sweetening before leading;

6. No limitation of allowable tetraethyl lead concentration in gasoline shall be considered as bearing upon the relative economics of ethylizing and reforming;

7. Tetraethyl lead cost shall be set at 0.26c per cc., and costs of blending and mixing with ethyl fluid shall be neglected;

8. No differential evaluation due to varying vapor pressure or boiling range characteristics of finished gasoline shall be made, and yields of reformed gasoline shall be based on 100% butane recovery. (This is a simplifying assumption and is usually of minor importance);

9. The evaluation of base stocks shall not take into account lead credit or debit due to overall changes in lead consumption resulting from blending with extraneous refinery gasolines. Evaluations shall be based on the assumption that the lead requirements of a blend of gasolines can be estimated with sufficient accuracy from a weighted average of the lead requirements of the components raised to the same octane number, where such lead requirements are small.

10. Evaluations are to be distinguished from the ultimate values which allow for corrections involving the factors of casinghead price, refinery butane balance, and lead susceptibility of the total gasoline produced in the refinery.

The basis of economic appraisal is the formulation of a mathematical equation, which, for a given finished gasoline price, establishes the value of the 400° E. P. low octane number straight run. In the development of such an equation, the simplest problem is that of leading the raw straight run to the desired octane number. Such an equation may be expressed as:

$$D = G - S - L \quad \text{.....(Equation 1)}$$

Where:

D = Raw charging stock value (400° E. P. virgin gasoline) in cents/gal., based on total ethylization.

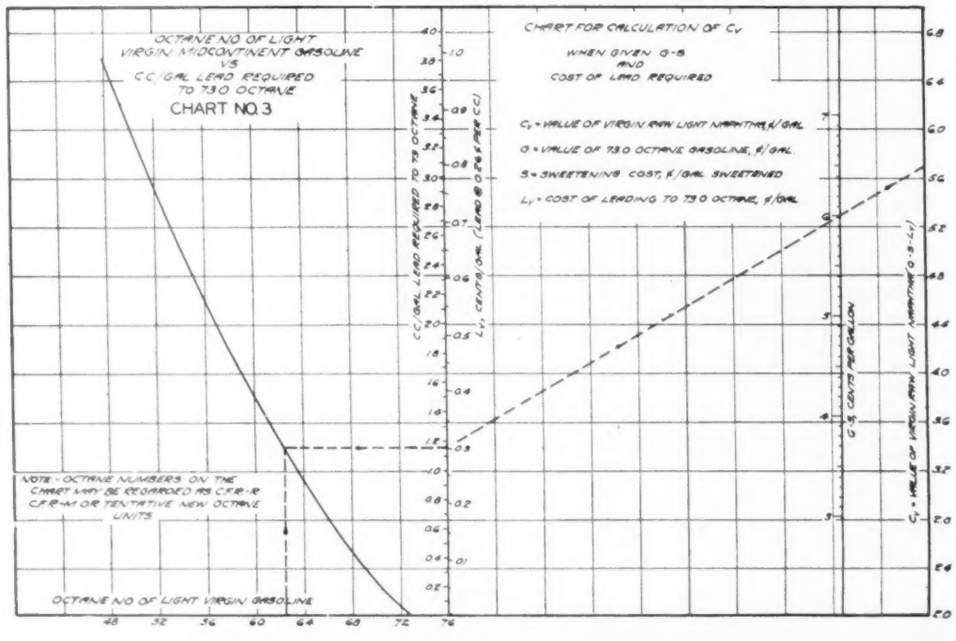
G = Finished gasoline value in cents/gal., (70 SFR-M or any other arbitrarily selected octane number on any fixed octane scale).

S = Sweetening cost, cents/gal. sweetened.

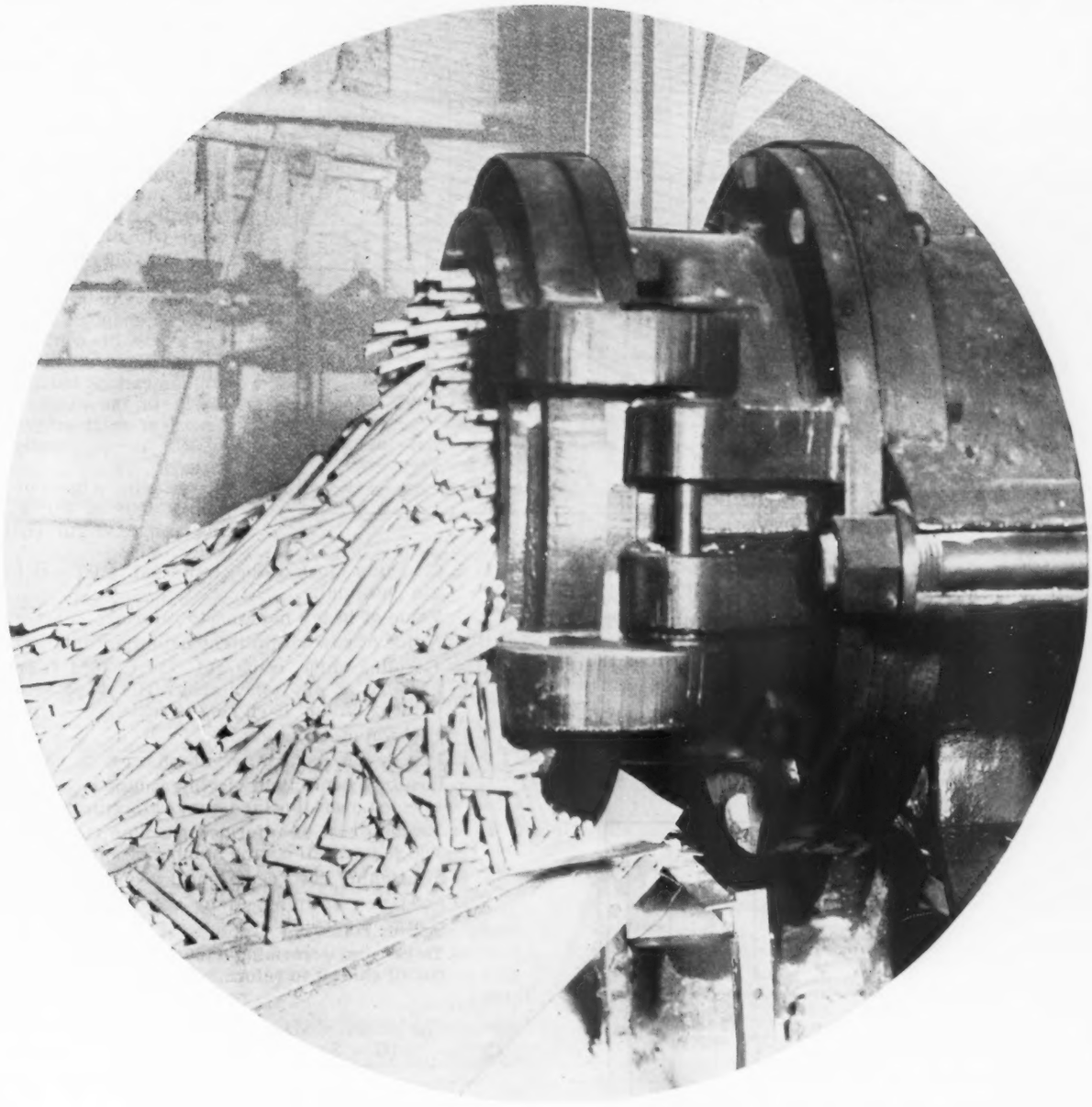
L = Leading cost of sweetened gasoline cents/gal. leaded.

The value of G, representing the value of the finished high-octane number gasoline, must be arbitrarily assigned. In this connection, the particular octane number and the particular octane scale must be specified for any given case, even though the equation has general applicability.

The leading cost, L, is a function of the initial octane value and leading characteristics of the particular virgin


OCTANE NO OF LIGHT VIRGIN MIDCONTINENT GASOLINE VS CC/GAL LEAD REQUIRED TO 73.0 OCTANE
CHART NO. 3
CHART FOR CALCULATION OF Cv WHEN GIVEN G-S AND COST OF LEAD REQUIRED
Cv = VALUE OF VIRGIN RAW LIGHT NAPHTHA, ¢/GAL
G = VALUE OF 73.0 OCTANE GASOLINE, ¢/GAL
S = SWEETENING COST, ¢/GAL SWEETENED
L1 = COST OF LEADING TO 73.0 OCTANE, ¢/GAL
NOTE - OCTANE NUMBERS ON THE CHART MAY BE REGARDED AS C.F.R.-R C.F.R.-M OR TENTATIVE NEW OCTANE UNITS
OCTANE NO OF LIGHT VIRGIN GASOLINE
CC/GAL LEAD REQUIRED TO 73 OCTANE
L1, CENTS/GAL. (LEAD @ 0.26 ¢ PER CC)
G-S CENTS PER GALLON
Cv = VALUE OF VIRGIN RAW LIGHT NAPHTHA (G-S-L1)

New Oil Decolorizing Agents



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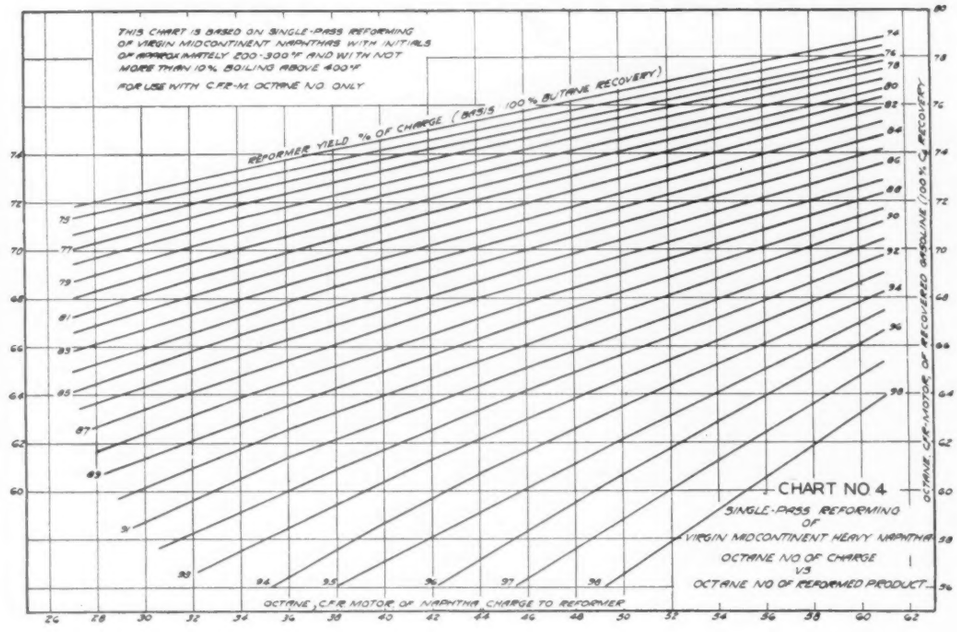

THIS CHART IS BASED ON SINGLE-PASS REFORMING OF VIRGIN MIDCONTINENT NAPHTHAS WITH INITIALS OF APPROXIMATELY 200-300°F AND WITH NOT MORE THAN 10% BOILING ABOVE 400°F
FOR USE WITH C.F.R.-M. OCTANE NO. ONLY
REFORMER YIELD % OF CHARGE (BASIS 100% BUTANE RECOVERY)
OCTANE, C.F.R. MOTOR, OF RECOVERED GASOLINE (100% C4 RECOVERY)
CHART NO 4
SINGLE-PASS REFORMING OF VIRGIN MIDCONTINENT HEAVY NAPHTHA
OCTANE NO OF CHARGE VS OCTANE NO OF REFORMED PRODUCT
OCTANE, C.F.R. MOTOR, OF NAPHTHA CHARGE TO REFORMER

gasoline under discussion—in this case, Mid-Continent 400°F. endpoint gasoline.

The entire calculation involved in evaluating the charge, D, is extremely simple when the ethylizing data and octane number characteristics of the 400° endpoint virgin naphtha are known.

The evaluation of 400°F. endpoint virgin gasoline in terms of optimum reforming plus ethylizing conditions is the next step in the analysis.

First, constant charging stock value rather than constant gasoline production has been selected as a basis. This is entirely an arbitrary selection, but high over-all gasoline yields under optimum reforming conditions make the matter of choice of basis unimportant. This is a simplifying choice, since charging stock values for definite gasoline and fuel values permit direct overall economic comparisons without the necessity of involving actual profits per day.

The evaluation of virgin 400° F. endpoint feed stock in terms of combined reforming and ethylizing conditions can be handled similarly to the evaluation in terms of total ethylization, which is previously discussed.

Assuming a basis of 1 gallon of 100° to 400° F. boiling range virgin charging stock, let:

C = Charging stock value, cents/gal. (100°-400°F. virgin gasoline).

C_r = Value of heavy naphtha to reformer, cents/gal.

C_v = Value of raw virgin light naphtha, cents/gal.

G = Gasoline value, cents/gal., (70 CFR-M sweetened gasoline or any other arbitrarily selected octane number on any fixed octane scale).

F = Fuel value, cents/gal.

P = Processing cost, cents/gal. charged to reforming.

L_v = Leading cost of light virgin gasoline (to arbitrarily selected overall octane number), cents/gal. leaded.

L_r = Leading cost of reformed gasoline (to arbitrarily selected overall octane number), cents/gal. leaded.

S = Sweetening cost, cents/gal. sweetened.

X = Feed to reforming, % by vol. of 100° to 400°F. charge.

Y = Yield from reforming (100% C_4 recovery), % by vol. of charge to reforming.

Then,

$$C_r = \frac{Y}{100}(G - S) + \left(\frac{100 - Y}{100}\right)F - P - \frac{Y}{100}L_r \quad \text{.....(Equation 2)}$$

and,

$$C_v = G - S - L_v \quad \text{.....(Equation 3)}$$

but,

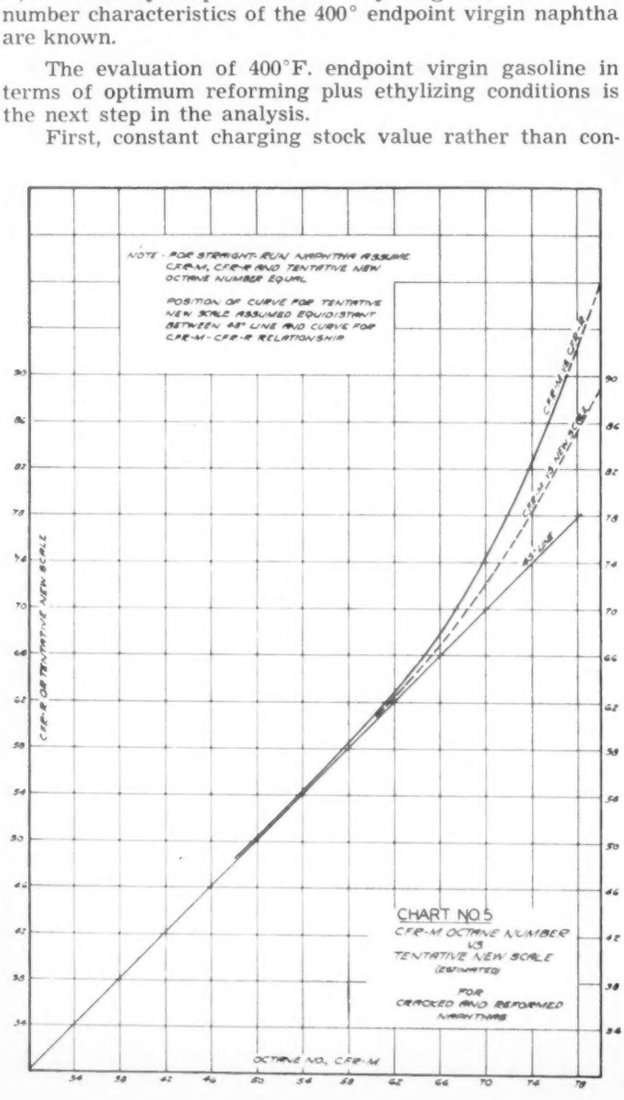
$$C = \frac{X}{100}C_r + \frac{100 - X}{100}C_v \quad \text{.....(Equation 4)}$$

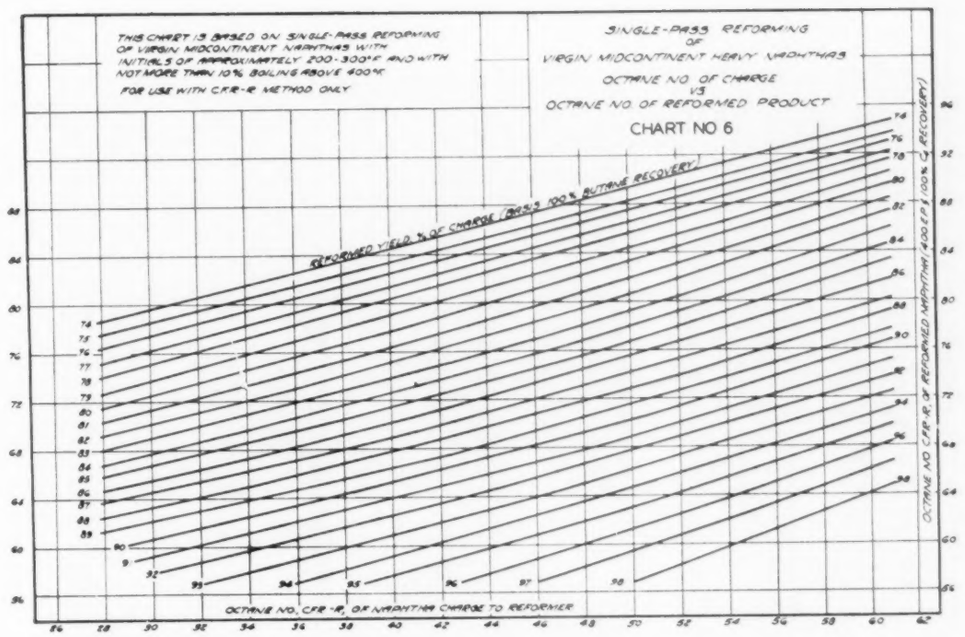
and,

$$C = \frac{X}{100}\left[\frac{Y}{100}(G - S) + \left(\frac{100 - Y}{100}\right)F - P - \frac{Y}{100}L_r\right] + \frac{100 - X}{100}(G - S - L_v) \quad \text{.....(Equation 5)}$$

The above relationship of equation 5 allows for no correction factor for treating losses, since it is designed primarily for use with reforming set-ups including clay treating and stabilization. Stock losses from treatment and treating costs, as well, can be evaluated and included under the processing cost (P) to make the equation generally applicable.

The equation indicates a method for computing the values of charging stock in terms of ultimate gasoline value for any overall fixed octane number and fuel valuation for any conceivable type of combined reforming and leading. It is obvious that detailed evaluation of optimum charging stock value over a wide range of product values


NOTE - FOR STRAIGHT-RUN NAPHTHA ASSUME C.F.R.-M, C.F.R.-R AND TENTATIVE NEW OCTANE NUMBER EQUAL
POSITION OF CURVE FOR TENTATIVE NEW SCALE ASSUMED EQUIDISTANT BETWEEN 45° LINE AND CURVE FOR C.F.R.-M - C.F.R.-R RELATIONSHIP
C.F.R.-R OCTANE NO.
C.F.R.-M OCTANE NO.
CHART NO 5
C.F.R.-M OCTANE NUMBER VS TENTATIVE NEW SCALE (ESTIMATED)
FOR CRACKED AND REFORMED NAPHTHAS
OCTANE NO., C.F.R.-M


THIS CHART IS BASED ON SINGLE-PASS REFORMING OF VIRGIN MIDCONTINENT NAPHTHAS WITH INITIALS OF APPROXIMATELY 200-300°F AND WITH NOT MORE THAN 10% BOILING ABOVE 400°F
FOR USE WITH C.F.R.-R METHOD ONLY
SINGLE-PASS REFORMING OF VIRGIN MIDCONTINENT HEAVY NAPHTHAS
OCTANE NO. OF CHARGE VS OCTANE NO. OF REFORMED PRODUCT
CHART NO 6
REFORMER YIELD, % OF CHARGE (BASIS 100% BUTANE RECOVERY)
OCTANE NO. C.F.R.-R. OF NAPHTHA CHARGE TO REFORMER
OCTANE NO. C.F.R.-R. OF REFORMED NAPHTHA (400°F.+ 100% C4 RECOVERY)

2 serves to establish the value of C_v (equations 3 and 4), but includes for completeness, the leading requirements as a function of octane. Since leading requirements are governed by the desired finished gasoline octane elevation, Chart 2 is limited to 70 octane by any of the three rating tests.

Chart 3 includes pertinent information comparable to Chart 2, but for an octane elevation of 73, with the corresponding values for C_v, (equations 3 and 4).

The next problem is to establish the variables of equation 2 for C_r. The principal information required is a correlation of octane number for the heavy naphtha charge as a function of the yield from the reformer, the

and reforming conditions involves a great many numerical calculations, even for a single feed stock such as Mid-Continent 400°F. endpoint virgin naphtha.

In examining equation 4, it will be noted that the overall charging stock value, C, represents a weighted average of the values of heavy naphtha charged to the reformer, C_r, and of that of raw virgin naphtha, C_v. The variables C_r and C_v do not appear in equation 5, which represents restating of equation 4, but the fundamental concept of C_r is a convenient one to bear in mind since unit optimum values can be developed for C_r under various conditions by graphical methods.

It will be noted from the above equations that certain basic data are necessary for their solution. Such data, used in this paper, are included so that discrepancies existing in specific cases may be quantitatively compared. However, the method is generally applicable, and the charts included are based upon several hundreds of individual tests, which when expressed graphically conform favorably with the curves as indicated.

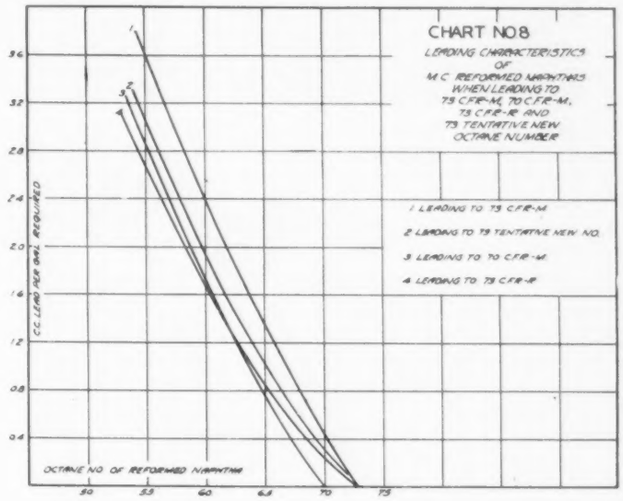
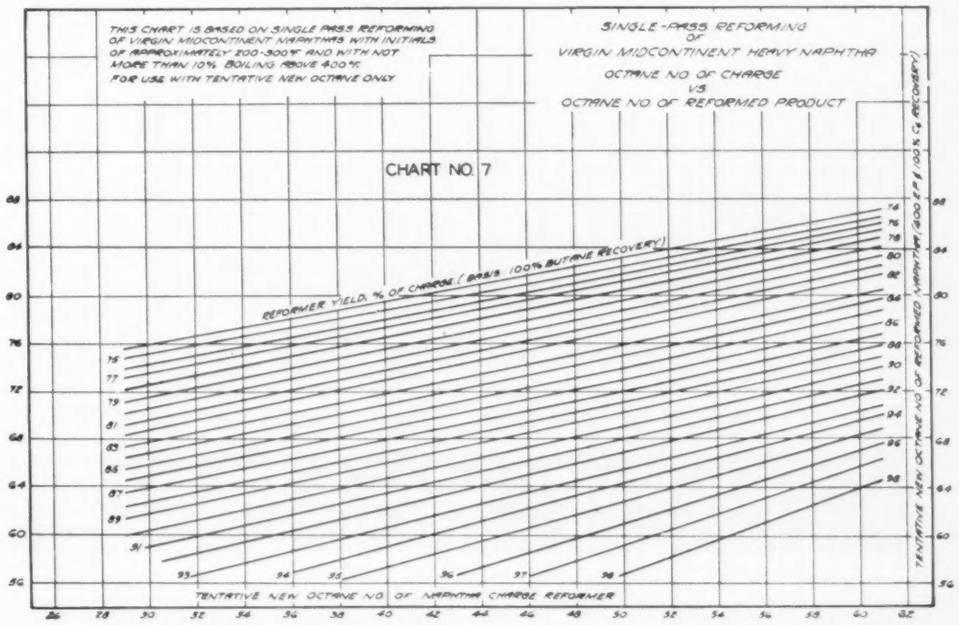


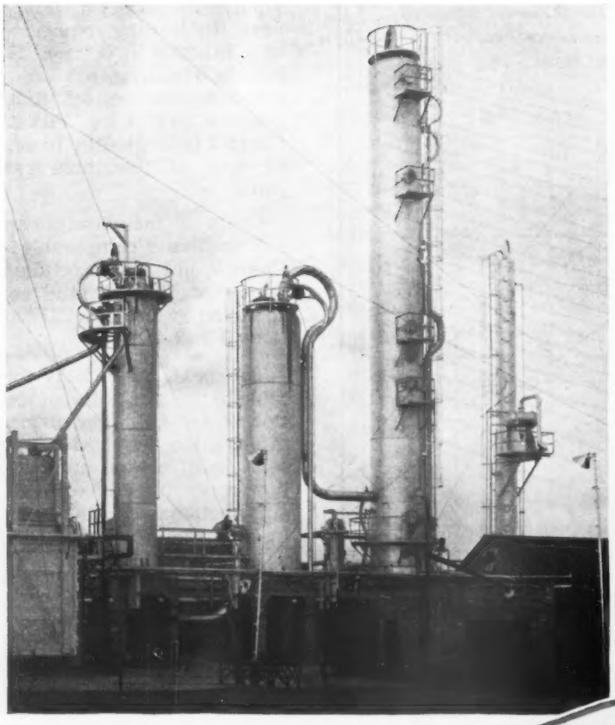
CHART NO 8
LEADING CHARACTERISTICS OF M.C. REFORMED NAPHTHAS WHEN LEADING TO 73 C.F.R.-M, 70 C.F.R.-M, 73 C.F.R.-R AND 73 TENTATIVE NEW OCTANE NUMBER
1 LEADING TO 73 C.F.R.-M.
2 LEADING TO 73 TENTATIVE NEW NO.
3 LEADING TO 70 C.F.R.-M.
4 LEADING TO 73 C.F.R.-R.
CC. LEAD PER BBL. REQUIRED
OCTANE NO. OF REFORMED NAPHTHA

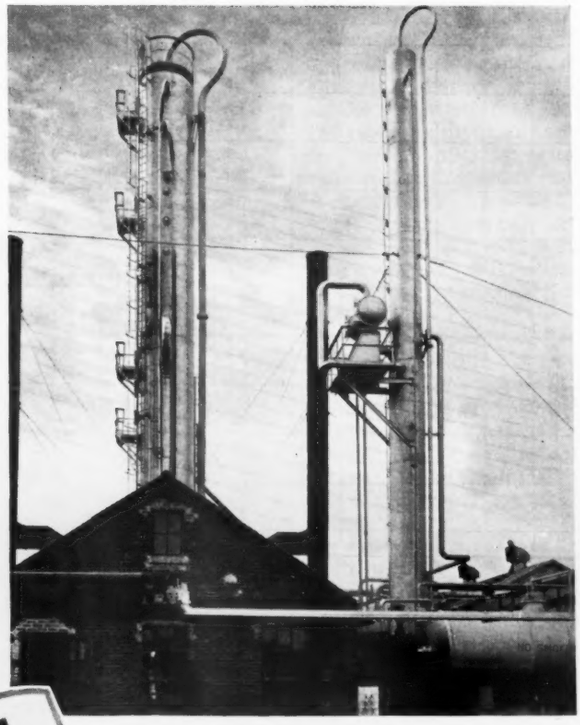
One of the first problems in the solution of equation 5 is the preparation of charts covering the economic variables involved for appraisal of the light naphtha fraction (C_v), equations 3 and 4, as a function of its percentage of the total 400° F. endpoint straight run (C), equations 4 and 5.

The left portion of Chart 1 covers the percentage of light virgin naphtha (100-X) as a function of octane, and the right portion of the chart, the resultant octane of the heavy naphtha (to be used in connection with Chart 4). Since octane rating differences between research and motor tests are generally equivalent for virgin naphthas this chart is applicable to CFR-M, CFR-R, or the assumed value of the tentative new rating, previously mentioned.

With the octane relationship of Chart 1 established, Chart


THIS CHART IS BASED ON SINGLE PASS REFORMING OF VIRGIN MIDCONTINENT NAPHTHAS WITH INITIALS OF APPROXIMATELY 200-300°F AND WITH NOT MORE THAN 10% BOILING ABOVE 400°F
FOR USE WITH TENTATIVE NEW OCTANE ONLY
SINGLE-PASS REFORMING OF VIRGIN MIDCONTINENT HEAVY NAPHTHA
OCTANE NO. OF CHARGE VS OCTANE NO. OF REFORMED PRODUCT
CHART NO. 7
REFORMER YIELD, % OF CHARGE (BASIS 100% BUTANE RECOVERY)
TENTATIVE NEW OCTANE NO. OF NAPHTHA CHARGE REFORMER
TENTATIVE NEW OCTANE NO. OF REFORMED NAPHTHA (400°F.+ 100% C4 RECOVERY)





Bubble towers for Barnsdall Oil Corp., Wichita, Kansas, fabricated from drawings and specifications furnished through Frick-Reid Supply Corp., U O P inspection for Dubbs Unit

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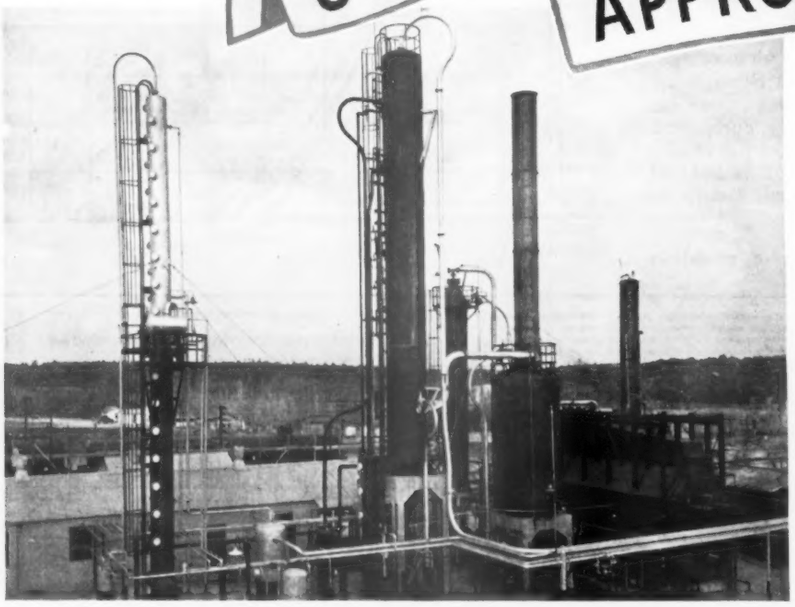

Bubble towers for Solvex Refining Co., Gladewater, Texas, fabricated from drawings and specifications furnished through Frick-Reid Supply Corp., U O P inspection for Dubbs Unit

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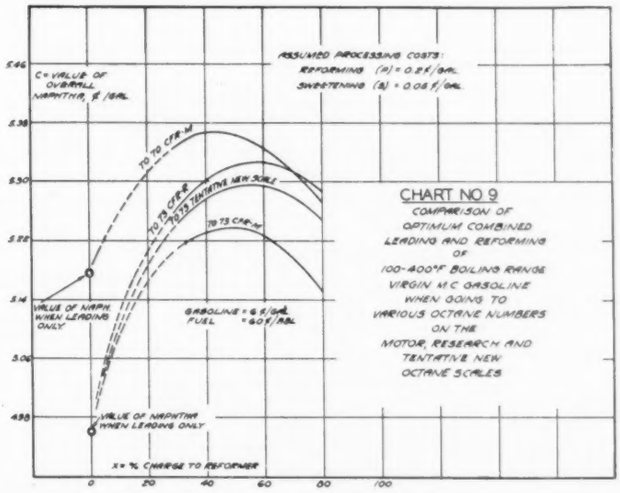
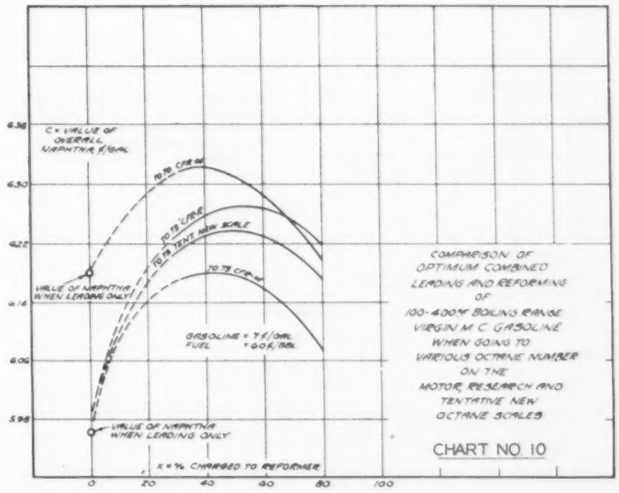

C = VALUE OF OVERALL NAPHTHA, ¢/GAL
ASSUMED PROCESSING COSTS:
REFORMING (R) = 0.2¢/GAL
SWEETENING (S) = 0.06¢/GAL
TO 70 CFR-M
TO 73 CFR-R
TO 73 TENTATIVE NEW SCALE
TO 73 CFR-M
VALUE OF NAPHTHA WHEN LEADING ONLY
GASOLINE = 6¢/GAL
FUEL = 60¢/BBL
VALUE OF NAPHTHA WHEN LEADING ONLY
X = % CHARGE TO REFORMER
CHART NO. 9
COMPARISON OF OPTIMUM COMBINED LEADING AND REFORMING OF 100-400°F BOILING RANGE VIRGIN M.C. GASOLINE WHEN GOING TO VARIOUS OCTANE NUMBERS ON THE MOTOR, RESEARCH AND TENTATIVE NEW OCTANE SCALES


C = VALUE OF OVERALL NAPHTHA, ¢/GAL
TO 70 CFR-M
TO 73 CFR-R
TO 73 TENT. NEW SCALE
TO 73 CFR-M
VALUE OF NAPHTHA WHEN LEADING ONLY
GASOLINE = 7¢/GAL
FUEL = 60¢/BBL
VALUE OF NAPHTHA WHEN LEADING ONLY
X = % CHARGED TO REFORMER
COMPARISON OF OPTIMUM COMBINED LEADING AND REFORMING OF 100-400°F BOILING RANGE VIRGIN M.C. GASOLINE WHEN GOING TO VARIOUS OCTANE NUMBER ON THE MOTOR, RESEARCH AND TENTATIVE NEW OCTANE SCALES
CHART NO. 10

octane number by a given test method commensurate with such yield, and the lead required to produce the desired octane number elevation. Several charts are necessary to cover these variables.

Upon the basis of several hundred test runs of varying octane number heavy naphthas, a correlation was established as indicated on Chart 4. This chart covers data for CFR-M ratings. Referring to Chart 1 for a given light naphtha cut, the octane number of the heavy naphtha was indicated. Using such values, Chart 4 establishes the Y term of equations 2 and 5, and permits arbitrary selection of heavy naphtha percentage, X (equations 4 and 5).

Cracked and reformed gasolines when rated by CFR-M and CFR-R methods, deviate to an increasing degree with increased octane number elevation. This deviation is indicated on Chart 5. The 45° line of the chart indicates values for CFR-M for both ordinates. The upper curve (CFR-M vs CFR-R), therefore, compared with the 45° line, indicates the octane "fade" between the two rating methods. As previously stated, a new (arbitrary) tentative method was assumed midway between CFR-R and CFR-M, and is shown as the dash line.

With the aid of Chart 5, Charts 6 and 7 are reconstructed from Chart 4, and can be used for economic appraisals relative to changes in anti-knock test methods when used with Chart 8, indicating the leading characteristics for such reformed products.

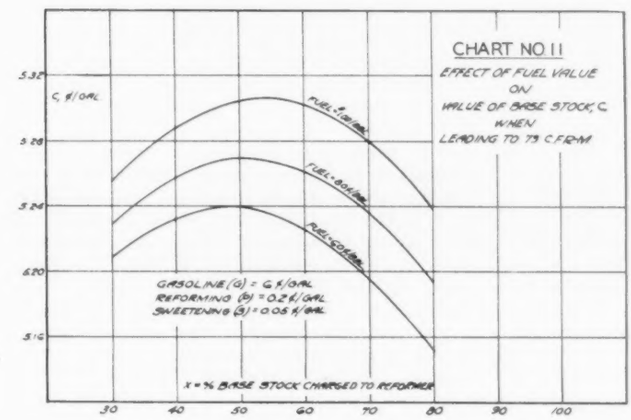
With the aid of Charts 1 to 8 inclusive, all the principal variables of equations 1 to 5 inclusive are determinable. Economic appraisals, then, resolve themselves into progressive arithmetic solutions when selecting values for X and Y and fixing values for G, F, P, and S.

Chart 9 establishes a comparison of optimum combined leading and reforming of 400° endpoint virgin Mid-Continent gasoline, and indicates the differential appraisals of the charge for the various octane rating methods.

Chart 9 is the solution of equation 5 when finished gasoline is appraised at 6 gal., and fuel at 60 bbl. (6,000,000 Btu LHV). The value of C in cents per gallon is plotted as a function of X (the percentage change to the reformer). The two circled points at the left of the chart indicate the value of the low octane straight run gasoline when no reforming is conducted. In such case, X equals zero. As quantity X is increased, the value of C increases, and passes through a maximum. The increased values for C, over the values for the circled points of any of the curves, indicate the profit to be derived by optimum reforming as a function of X. The differential value of C for the two circled points when X equals zero is the potential increase in cost to the refiner for increasing the octane elevation from 70 to 73 by any of the three ratings without reforming. It is to be noted that by combining leading and reforming the differential value of C between the curves diminishes, and therefore in the event of higher octane elevation, reforming shows a greater degree of profit.

Chart 10 is similar to Chart 9, except that finished gasoline is assumed at 7c per gal. The differential values of C are slightly diminished by the increase in gasoline price, but still show considerable profit even at this high value. Fuel value for Chart 10 is similar to that of Chart 9, namely, 60c per bbl. With a higher priced gasoline, the charge to the reformer, X, is slightly lower than was the case in Chart 9 with 6c gasoline.

In order to establish the magnitude of change in the value of C, with variation of F (fuel value), Chart 11 was constructed. It can be seen from this chart that as fuel value increases the value of C also increases, and further, the percentage of X at an optimum increases. It is obvious that the reason for this increase is that the degradation products of reforming claim a higher market value. This


C, ¢/GAL
FUEL = 70¢/BBL
FUEL = 60¢/BBL
FUEL = 50¢/BBL
GASOLINE (G) = 6¢/GAL
REFORMING (R) = 0.2¢/GAL
SWEETENING (S) = 0.06¢/GAL
X = % BASE STOCK CHARGED TO REFORMER
CHART NO. 11
EFFECT OF FUEL VALUE ON VALUE OF BASE STOCK, C, WHEN LEADING TO 73 C.F.R-M

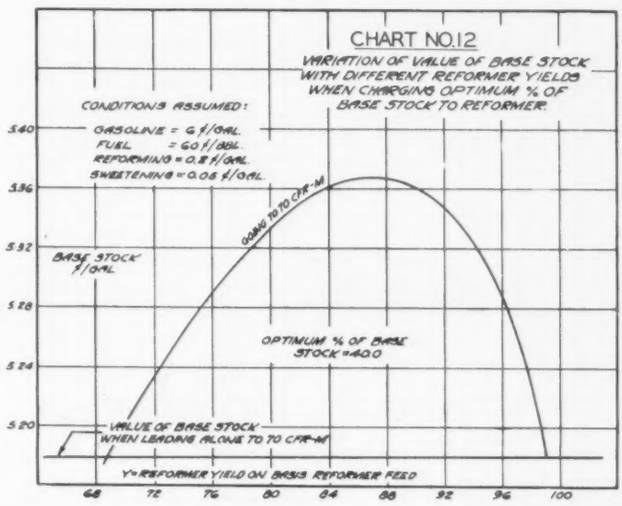


CHART NO. 12
VARIATION OF VALUE OF BASE STOCK WITH DIFFERENT REFORMER YIELDS WHEN CHARGING OPTIMUM % OF BASE STOCK TO REFORMER
CONDITIONS ASSUMED:
GASOLINE = 6¢/GAL
FUEL = 60¢/BBL
REFORMING = 0.2¢/GAL
SWEETENING = 0.06¢/GAL
GOING TO TO CFR-M
BASE STOCK ¢/GAL
OPTIMUM % OF BASE STOCK = 40.0
VALUE OF BASE STOCK WHEN LEADING ALONE TO TO CFR-M
Y = REFORMER YIELD ON BASIS REFORMER FEED

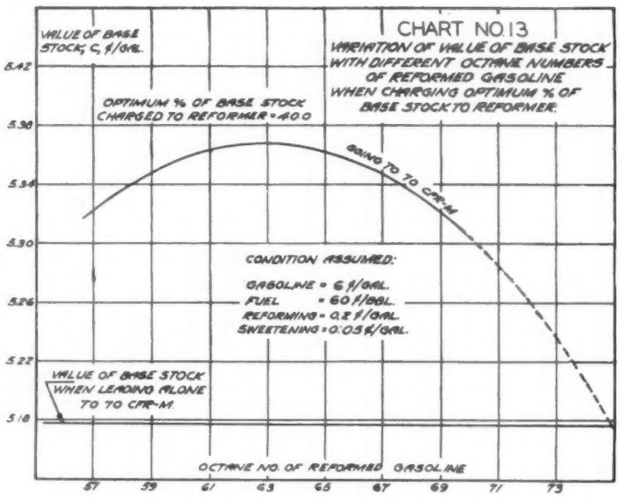


CHART NO. 13
VARIATION OF VALUE OF BASE STOCK WITH DIFFERENT OCTANE NUMBERS OF REFORMED GASOLINE WHEN CHARGING OPTIMUM % OF BASE STOCK TO REFORMER.
VALUE OF BASE STOCK, C, ¢/GAL.
OPTIMUM % OF BASE STOCK CHARGED TO REFORMER = 40.0
GOING TO 70 CFR-M
CONDITION ASSUMED:
GASOLINE = 6 ¢/GAL.
FUEL = 60 ¢/BBL.
REFORMING = 0.2 ¢/GAL.
SWEETENING = 0.05 ¢/GAL.
VALUE OF BASE STOCK WHEN LEADING ALONE TO 70 CFR-M
OCTANE NO. OF REFORMED GASOLINE

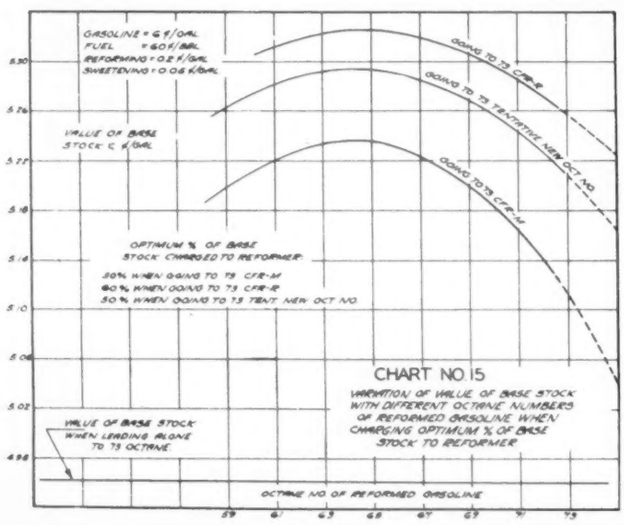
is important, of course, in cases where refiners are burning fuel oil and have a deficiency of gas.

Chart 12 shows the variation of values of base stock (C) with variation in reforming yield (Y) when charging the optimum percentage of heavy naphtha (X) to the reformer when going to 70 CFR-M octane number elevation. In order to obtain the maximum value of C, the yield from the reformer should be 87%. This percentage yield for optimum reforming is substantially higher than used in most reforming operations, and would indicate that reforming in general should be less severe than commercially practiced.

Chart 13, like Chart 12, applies to 70 CFR-M octane number and is similar, but interprets yield from the reformer in terms of reformed gasoline octane number. The optimum is at about 63 CFR-M.

Chart 14 is comparable to Chart 12 for 73 octane number by the motor, research and tentative new test methods. Here the optimum yield from the reformer, Y, differs little from that in Chart 12, but greater revenue is produced due to the necessity of using larger lead quantities when not reforming. Percentages of charge to the reformer, X, are the optima as established on Chart 9, and Chart 15 indicates the corresponding optima octane numbers produced from the reformer. For a finished octane number of 73 CFR-M, 64 reformed gasoline octane number gives the highest value for C, while for 73 CFR-R, the corresponding value is at 65 CFR-R. The tentative octane scale gives an intermediate value.

Summarizing the magnitude of the differential revenue derived for optimum reforming and leading versus no


GASOLINE = 6 ¢/GAL.
FUEL = 60 ¢/BBL.
REFORMING = 0.2 ¢/GAL.
SWEETENING = 0.05 ¢/GAL.
VALUE OF BASE STOCK C, ¢/GAL.
GOING TO 73 CFR-R
GOING TO 73 TENTATIVE NEW OCT. NO.
GOING TO 73 CFR-M
OPTIMUM % OF BASE STOCK CHARGED TO REFORMER:
80 % WHEN GOING TO 73 CFR-M
60 % WHEN GOING TO 73 CFR-R
50 % WHEN GOING TO 73 TENT. NEW OCT NO.
CHART NO. 15
VARIATION OF VALUE OF BASE STOCK WITH DIFFERENT OCTANE NUMBERS OF REFORMED GASOLINE WHEN CHARGING OPTIMUM % OF BASE STOCK TO REFORMER
VALUE OF BASE STOCK WHEN LEADING ALONE TO 73 OCTANE
OCTANE NO. OF REFORMED GASOLINE

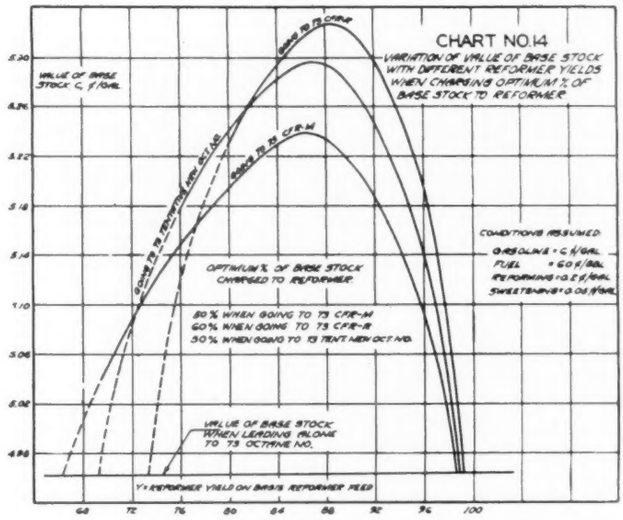


CHART NO. 14
VARIATION OF VALUE OF BASE STOCK WITH DIFFERENT REFORMER YIELDS WHEN CHARGING OPTIMUM % OF BASE STOCK TO REFORMER
VALUE OF BASE STOCK C, ¢/GAL.
GOING TO 73 CFR-R
GOING TO 73 TENTATIVE NEW OCT. NO.
GOING TO 73 CFR-M
OPTIMUM % OF BASE STOCK CHARGED TO REFORMER
80 % WHEN GOING TO 73 CFR-M
60 % WHEN GOING TO 73 CFR-R
50 % WHEN GOING TO 73 TENT. NEW OCT NO.
CONDITIONS ASSUMED:
GASOLINE = 6 ¢/GAL.
FUEL = 60 ¢/BBL.
REFORMING = 0.2 ¢/GAL.
SWEETENING = 0.05 ¢/GAL.
VALUE OF BASE STOCK WHEN LEADING ALONE TO 73 OCTANE NO.
Y = REFORMER YIELD ON BASIS REFORMER FEED

reforming, the following figures are obtained:

Basis: 6c gasoline, per gal.; 60c fuel, per bbl.

Octane Elevation	Octane Test Method	Bbls. Reformer Chg. per day	Increased revenue, per year
70	CFR-M	5,000	$365,000
73	CFR-M	5,000	425,000
73	CFR-R	5,000	470,000
73	Tentative new	5,000	515,000

Without reforming, increasing the octane elevation from 70 to 73 by any octane rating method results in a yearly loss in revenue of $32,000 per 1000 bbls. per day of Mid-Continent straight run gasoline produced.

Nationalism Coloring Research In Europe, Rockwell Finds

W. F. Rockwell

PITTSBURGH, Aug. 4.—Policies of nationalism, rearmament, and national self-sufficiency are making the problems of research different in European laboratories, from those occupying similar laboratories in America, says W. F. Rockwell, Jr., son of the president of Pittsburgh Equitable Meter Co., and just returned from a tour of Europe taken under the auspices of National Research Council.

Large Government laboratories, carried on under close Government supervision, are prosecuting research problems not only for small industries which cannot support private research laboratories, but are solving problems for larger industries, Rockwell says. Both Government and private laboratories are studying, among many other problems, those of developing stronger steels for armor plate, better alloys for aircraft, better fuels and numerous others. Greater co-operation is manifest between private and governmental research and between government and private industry.

In Germany all research is carried out under strictest government supervision, in attempting to produce synthetic materials to supplant those which must now be imported. Thirty-two Kaiser Wilhelm Institutes over Germany are working hand in hand with industry, as well as the laboratories of Krupp, I. G. Farbenindustrie, and others. These organizations work on specific industrial problems.

Many noted scientists are forging ahead on greater discoveries, and are training younger men and women to carry on their work. England has established Government laboratories to work on industrial problems which are supported both by the government and by private industry, he says.

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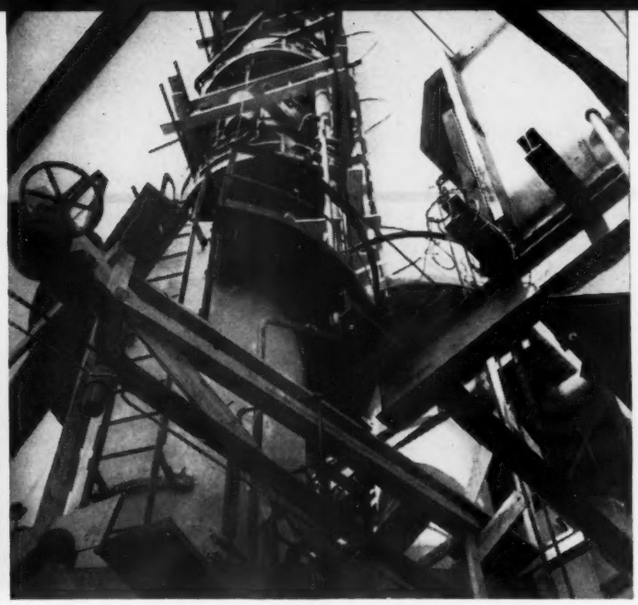
Chester, Pennsylvania

Almost ready for the tube fittings this furnace will soon be ready to operate. The welders are on top finishing their part of the work while in the background can be seen the fractionating tower with several workmen busy at various levels. (That's a right fair sized chew the fellow on the left scaffolding of the furnace is handling.)



A tangle of steel and scaffolding now but within another 60 days an orderly arrangement of steel that makes the modern refinery. This view is looking up the side of the main tower. The man in the lower foreground, holding to the scaffold, is spreading insulation on the tower with quite a bit of it on himself

Talco Refinery A Complete Operating Unit

ONE of the most modern refineries for its size in the Mid-Continent is the one being constructed at Mt. Pleasant, Tex., by the Talco Asphalt & Refining Co. As its name implies, the plant will process crude produced in the Talco field, some 14 or 16 miles north of Mt. Pleasant. Capacity is to be approximately 6000 barrels daily.

Four partners, also producers in the Talco field, are constructing the refinery. They are D. Harold Byrd, Capt. J. F. Lucey, Jack Frost and Ralph E. Fair. Approximately $2,500,000 is their investment in the project.

The plant will not have to depend on the "outside" for anything. The crude will be transported from the partners' wells to the plant in their own pipe line, already completed. A compact and efficient steam plant has been completed, along with an electrical power plant.

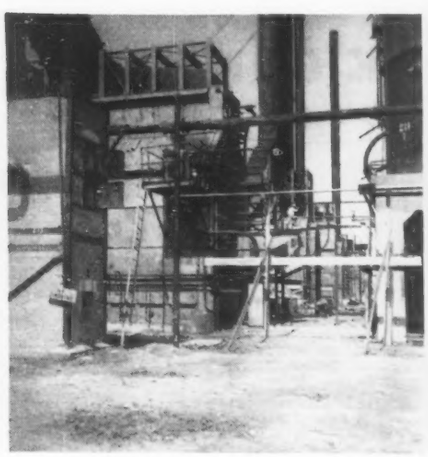
Construction is under the supervision of the Universal Oil Products engineers although Talco sent one of its engineers to the U. O. P. offices in Chicago to assist in preparation of plans. J. K. MacKinnon, general manager of the Talco company, is in charge of all work.

The plant will have a topping unit, a two furnace selective phase cracking unit similar to those that have been installed recently under U. O. P. license in several other plants, a reforming unit, and equipment for making blown asphalt and road oil by vacuum distillation.

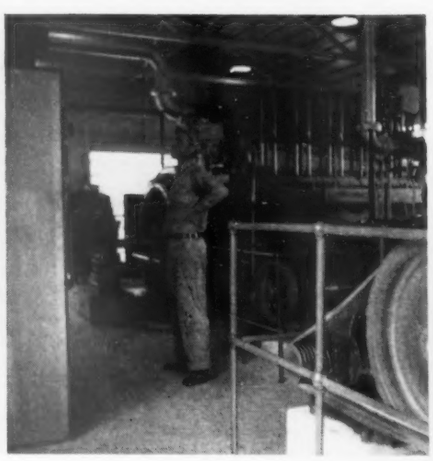
A 5,000,000-gallon lake has been constructed for a reserve water supply, although most of the plant water will come from deep wells. Bungalows have been constructed around the edge of the lake for a number of the company's office and refinery employes.

While the topping unit already is in operation it is doubtful now, in view of the delay in receiving steel, that the remainder of the plant will be in operation before early September.

The plant is expected to provide a 50% gasoline yield from the Talco crude, with 40% yield of asphalt and road oil.



The alley between the four tube furnaces and the various towers and condensers is still a maze of piping and scaffolding although the topping unit in the foreground has been completed and placed in operation. The other three furnaces are in various stages of completion



Not even for electrical current will the plant have to depend on the outside. Two large gas engines and direct drive dynamos provide the current for the entire refinery and the homes of the employes

Down in the ground and up in the air, the work goes on. While two men are on top of the tower to "set" the top that has just been hoisted up there, a dozen or more men are down in the ditch below laying piping and making connections

HERE IS A CRACKING UNIT

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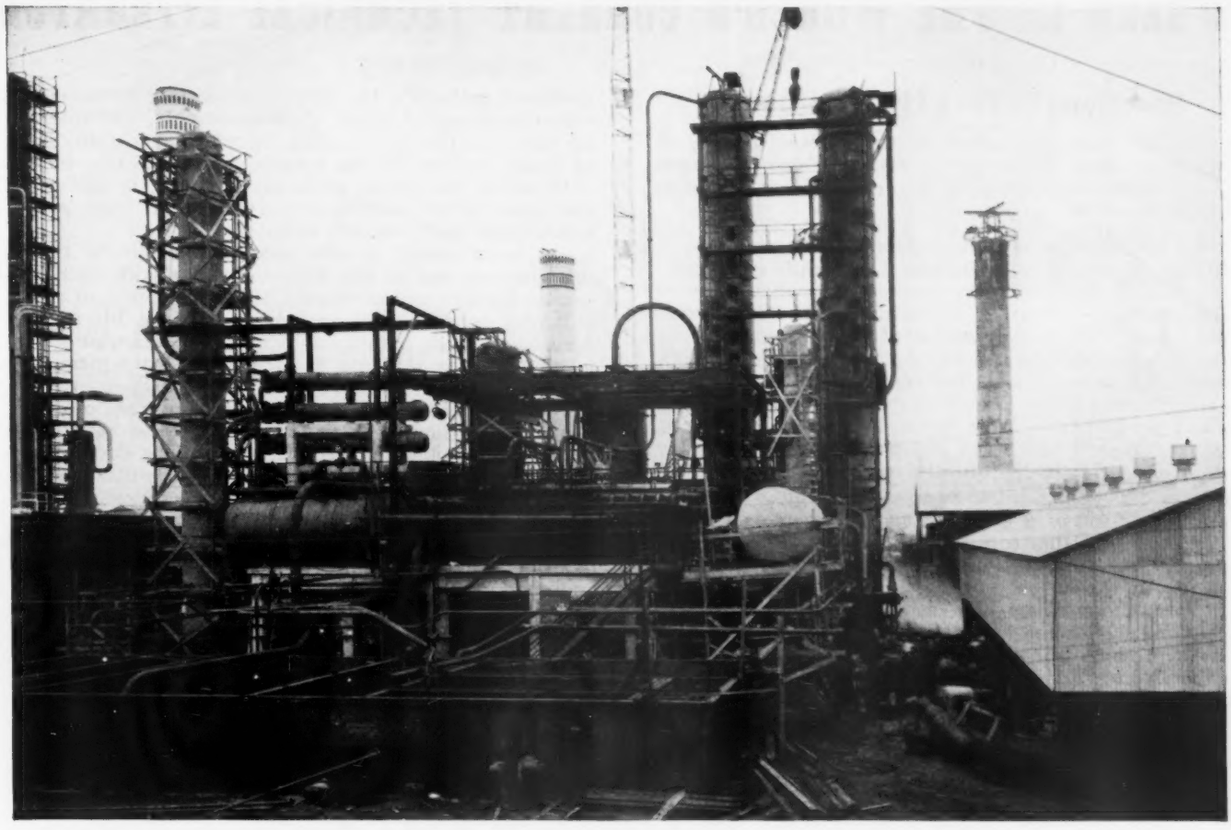

For a major oil company, Lummus has just completed and is now starting up a 14,000 barrel per day Lummus Combination Selective Cracking Unit operating on Van Zandt crude.

Due to its design and compactness—high octane gasoline, close-cut solvents, kerosene, furnace oil and Bunker "C" fuel oil are produced from the same unit—installation, labor and fuel costs are remarkably low. Another distinctive feature of this installation is a development of the Lummus Oil Heater to provide a controlled heating and soaking section, enabling the refiner to regulate the time and temperature effect of cracking. This, of course, assures greater flexibility in cracking, with less coke formation and longer runs.

How does your equipment check with the economy and performance of this Lummus Combination Selective Cracking Unit?

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Reactions of Pure Hydrocarbons

Reactions of Pure Hydrocarbons, by Gustav Egloff, director of research, Universal Oil Products Co., 897 pages, Reinhold Publishing Corp., N. Y., an American Chemical Society Monograph.

"* * * To increase the interest in hydrocarbons . . . . stimulate research of a fundamental and utilitarian character . . . ." These phrases sum up the philosophy of Dr. Gustav Egloff as author of "Reactions of Pure Hydrocarbons," published recently as one of the American Chemical Society's Monograph Series. And, covering as it does the published researches of the chemical world for more than a century in every branch of the hydrocarbon family, those two purposes should be accomplished in large degree. The saving in time and effort required of the investigator to search the original literature is no small factor in the matter.

For the period of a generation and longer, one of the most irksome and time-consuming tasks at the beginning of any research investigation has been the search of the literature. In the absence of a complete file of chemical publications, the problem of a complete literature survey has been a troublesome and often an expensive one. The new book presents in condensed and thoroughly correlated form the findings of several hundred investigators as reported in the literature in more than 1500 references which include apparently every scientific and technical publication in the world. Such a huge collection of first-hand data could be made only at the expense of years of work, of careful study of the literature and of cataloging the material covered. In fact more than ten years have been spent by the author, director of Universal Oil Products Co., laboratories, one of the largest research organizations in the world, in assembling, digesting and correlating this tremendous mass of information, which constitutes the essence of what the scientist knows of the reactions of hydrocarbons.

In arrangement the book is divided into seven chapters, which, following the brief introduction, treat in succession the reactions of paraffin, olefin, acetylene, aromatic, cycloparaffin and cyclo-olefin, and terpene hydrocarbons. Discussion is divided into references dealing with individual hydrocarbons, beginning with methane in a series of over 30 of the paraffins, and continuing to discuss in turn the more important of the hydrocarbons in each group. The literature is divided broadly into catalytic and non-catalytic treatment, along with electro-treatment and the use of cathode and other rays, photosensitization, and similar methods.

The science and technology of catalysis may take a bow to the book; this rapidly expanding field is recognized in a most satisfactory manner by the volume of discussion of catalysts, reactions, results, and the facts and theories of these reactions. It will prove an invaluable source book for the study of this field.

Non-catalytic treatment, especially thermal decomposition, is covered quite as exhaustively, however. Particular attention is given to the decomposition and polymerization reactions of the paraffins, especially from propane to octane, although all common paraffins are included. Because of the extremely important industrial possibilities of these hydrocarbons and the extensive research going on now to promote their utilization for producing fuels and synthetic materials, the literature recently contains a considerable mass of data. Correspondingly, the interest in all phases of this field is high, therefore almost any amount of space, devoted to the reactions of these raw materials with which we are so profusely supplied, is justified and the contents will receive serious attention from every oil technologist and research chemist.

A most useful scheme used in the book is the summarizing, at end of the section dealing with each hydrocarbon family—as the octanes, acetylenes, etc.—of products obtained, conditions of treatment and the literature references, on each individual hydrocarbon discussed. Literature references applying to each chapter are given at the end of the chapter, and referred to by number in the text in conventional manner. In discussing the more complicated reactions of the larger molecules such as the cycloparaffins and the aromatics, space is devoted to explanation, with the aid of structural formulas and equations, of the mechanism, actual or theoretical, of conversion of one hydrocarbon to another. An instance of this is the conversion of cycloparaffins such as ethylcyclohexane to aromatics such as toluene, by dehydrogenation of the ring and dealkylation of the side chain.

This volume is obtainable from the Book Department National Petroleum News, 1213 West Third St. Cleveland. Price is $16.75.

* * *

Fractional Extraction

Methylcyclohexane and n-heptane mixtures are treated in a discussion of graphical design methods applied to fractional extraction. K. A. Varteressian and M. R. Fenske. Ind. Eng. Chem., March, 1937, *p.* 270.

The phase diagram at 25°C. and one atmosphere pressure is obtained for a system in which methylcyclohexane is more soluble than *n*-heptane with analine as the solvent. Since the mixture follows Raoult's law, separation is made also by fractional distillation for comparison.

For the case of extraction, the equilibrium data can be expressed as a simple equation. Although the simple distribution law does not hold, the ratio of the two distribution coefficients is a constant and this concept is the same as that used in distillation involving the ratio of the two vapor pressures.

Relationships are derived for the case of minimum reflux ratio and minimum number of theoretical plates in the extraction process, and graphical means are presented for calculating the intermediate cases. Methods are presented for calculating fractional extraction problems where the concept of "reflux" is utilized to obtain sharper separation.

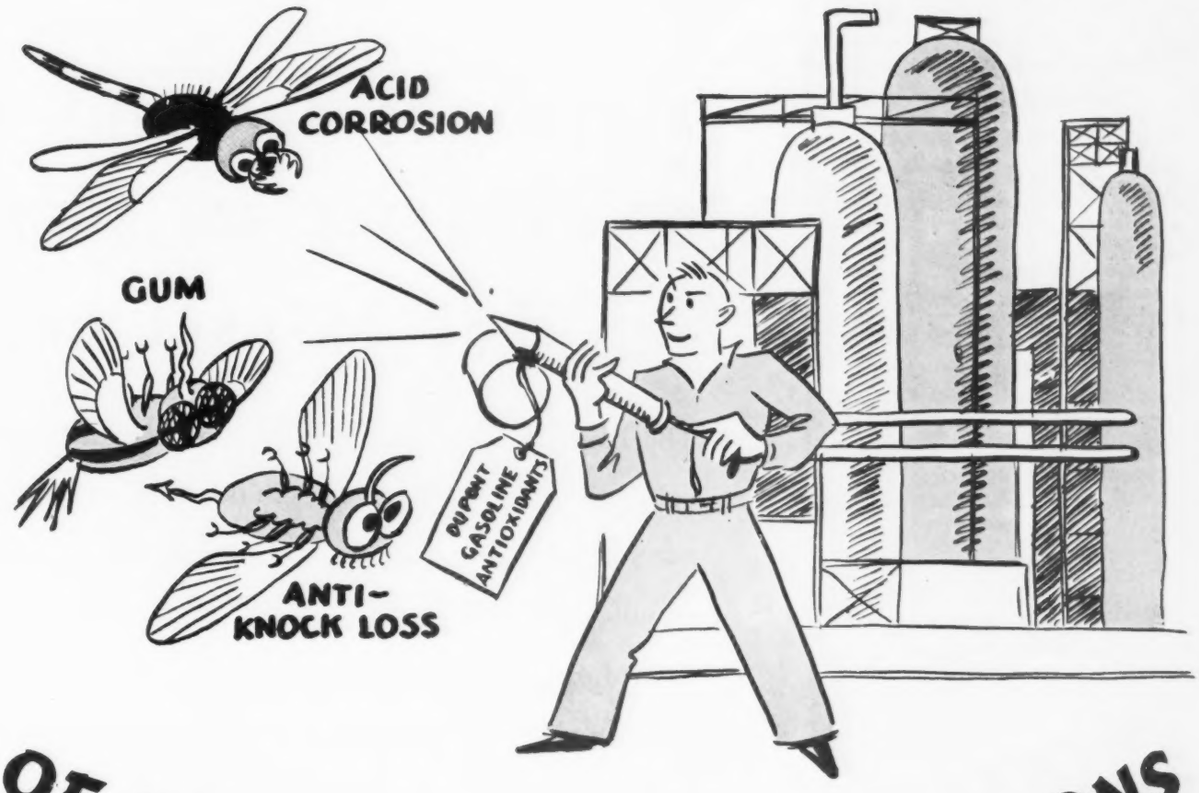
* * *

Solvent Extraction

Countercurrent extraction in a tower is evaluated by comparison with laboratory batch extraction. J. H. Rushton, Ind. Eng. Chem., March, 1937, *p.* 309.

Results of the comparison laboratory and large-scale extractions are intended to be a basis for design of equipment to effect separations by extraction or systems similar

KEEP THE "BUGS" OUT



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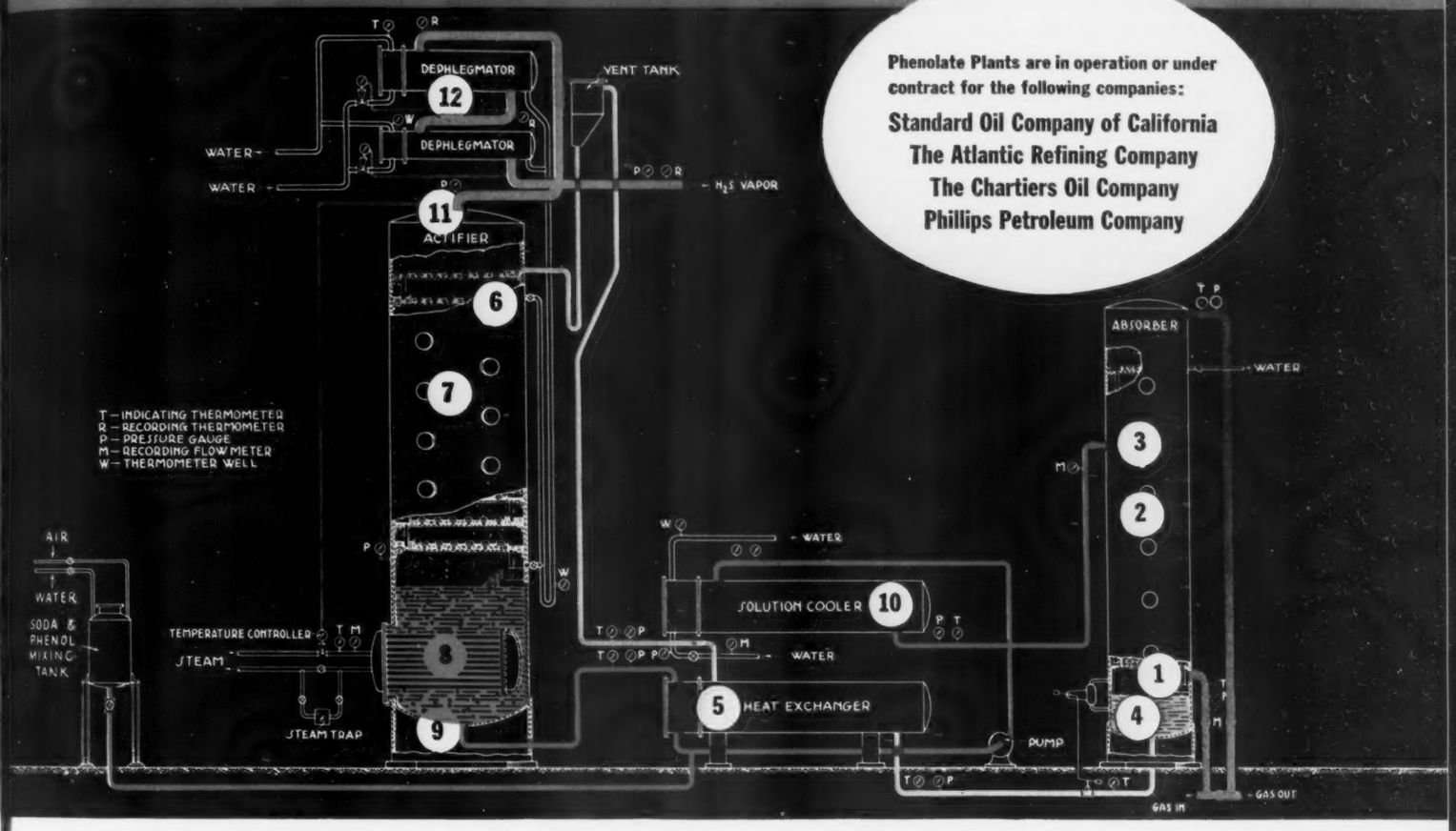
Phenolate Process



Phenolate Plants are in operation or under contract for the following companies:

Standard Oil Company of California
The Atlantic Refining Company
The Chartiers Oil Company
Phillips Petroleum Company

ABSORPTION PHASE

The hydrogen-sulfide laden gas enters the absorber at (1), passes up through the bubble-cap trays (2) and leaves at the top. Through absorption by the phenolate solution which entered at (3), the gas is stripped of 95%—99.8% of its hydrogen sulfide.

ACTIFICATION PHASE

The sulfided phenolate solution collects in the bottom of the absorber, passes out at (4) into the heat exchanger (5) and into the top of the Actifier at (6). It flows down over the actifier trays (7) through stripping-steam, generated in the reboiler (8), which removes the hydrogen sulfide from the phenolate. The phenolate then flows from the reboiler at (9) to the heat exchanger (5), is further cooled in the solution cooler (10), and is introduced again into the absorber, ready for another absorption phase.

RECOVERY PHASE

Steam, laden with hydrogen sulfide, leaves the top of the actifier at (11) and passes into the Dephlegmators (12). The condensed steam is returned to the actifying column, and the recovered hydrogen sulfide is forced, by actifier pressure, to the acid plant burner, or other point of utilization.

The three top trays of the absorber are filled with water, and act as strippers to recover entrained or evaporated process chemicals. Fresh water is fed to these trays continuously. At periods of several days, chemicals lost from the system must be replenished. A small mixing tank is provided for this purpose.

Koppers Phenolate Process is covered by U. S. Patents Nos. 1,971,798; 2,002,357; 2,028,124; and 2,028,125.

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to the solvent-oil system (naphthenic and paraffinic type oils with nitrobenzene) used in these experiments. An equilibrium curve has been obtained and data are presented in the form of a chart for convenience.

It is concluded that countercurrent liquid-liquid extraction in a packed tower can be evaluated by laboratory equilibrium batch countercurrent extractions in terms of equivalent stages and over-all per cent efficiency of solvent. Experimental results have been found to be reproducible.

Variables entering into the design of tower equipment are summarized as follows: There is little difference in extraction using glass, stoneware, or carbon of equivalent size. There is a limit to the amount of oil that can be handled by, a given size of packing. Throughput is lower but extraction is better with small-sized packing. Graded packing (larger at the bottom and smaller at the top) gives better results than uniform packing. Recirculation of extract and mixing it with incoming oil increases the oil throughput and the equivalent theoretical stages (ETS).

Settling spaces required are small and are dependent upon the size of packing nearest the space. For a given height of packing, as the solvent ratio increases the ETC and the per cent efficiency both decrease. ETS is most effected. For a given height of packing, as the oil rate increases the ETS decrease and per cent efficiency increases. ETS is most effected. Low interface levels (or large continuous raffinate phase) give highest ETS and per cent efficiency. Preferential wetting of the packing seems to have no appreciable effect on the extraction.

* * *

Better Lubrication with "Run-In" Bush

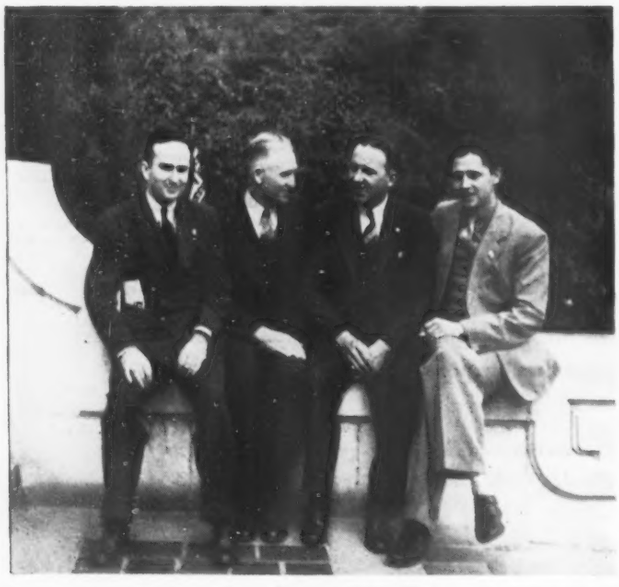
Improved lubrication found not due to oxidizing the lubricant as formerly suspected. C. Jakeman and A. Fogg, J. Inst. Pet. Tech., May, 1937.

Improved lubrication obtained by prolonged running of a journal bearing in oxidizing conditions is not due to change in the lubricant, as previously reported, but to changes in the form of the bush and in the quality of the running surface.

An investigation was made to determine how much improvement was attributable to oxidation of the lubricant and whether blowing the lubricant with hot air before test would produce the same effect.

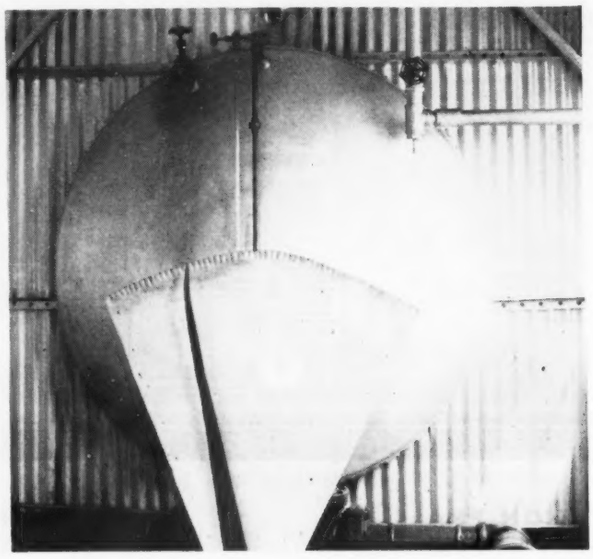
Starting with a new bush and running to seizure about every 6 or 7 hours, the seizing temperature of one of the oils increased from about 200° C. to about 300° C. and the minimum coefficient of friction decreased from 0.0008 to 0.0005 in a period of about 30 hours. A sample of the same oil, subjected to oxidizing conditions before running in the machine, gave similar results. When a sample of the new oil was run in one of the bushes which had already been used, the same values were reached after one or two seizures. Each of several other lubricants tested in a bush already "run-in" gave its optimum performance on the first run, and further blowing did not affect the results.

The improvement in seizing temperature and minimum friction was also obtained when fresh oil was fed to the bearing continuously, any possibility of cumulative oxidation being eliminated.



J. B. Fairfield, Sunray Oil Corp., Tulsa; W. F. Sims, Panhandle Refining Co., Wichita Falls, Tex.; Dr. C. W. Rippie, Solvay Sales Corp., and C. W. Berger, Globe Oil & Refining Co., McPherson, Kan.

Long Pointer Solves Problem Of Exact Valve Setting



A pointer of light sheet metal, backed by a scaled sheet as background, makes exact setting of the valve simpler

When manual control is required to regulate the flow of oil delivered by centrifugal pumps in a gasoline plant, the gate or plug stop is frequently pinched so a back pressure is held against the discharge to reduce the volume. Setting the gate valve or stop is quite difficult when a certain level is desired in the fat oil tank, for example, when the liquid level control on the absorber is allowing a constant stream of oil to flow into the vessel.

J. O. Green, Supt., of the Earlsboro gasoline plant operated by Barnsdall Oil Co. solved the problem of accurate adjustment by attaching a two-foot long indicator to the stop plug, and placing a metallic background behind the indicator for reference. The indicator was made of light sheet metal, easily cut with tin snips, with a hole in the larger end to fit snugly over the squared end where the wrench is placed for operation. The background was made of light sheet metal also, attached to the body of the gate so it would be rigid enough that it would not be easily moved. The upper end of the background was marked with a chisel at regular intervals where the tip of the pointer almost touched. The indicating 'gadget' was placed in front of the rich oil tank so the stillman could easily see the gauge glass, and by moving the plug valve stop one or two indicator marks, adjustment is easily obtained.

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Patent Literature OF TODAY

Lubricating Oil. No. 2 081 075, *issued May* 18, 1937; *filed July* 6, 1936; *A. C. Vobach, assignor to Sinclair Refining Co.; no drawing;* 6 *claims.*

Calcium phenyl stearate or mixtures with calcium stearate are compounded with lubricating oil. The improved lubricant has a high solvent capacity for sludge and renders deposits of sludge and carbon in an engine soft and friable rather than hard and coherent, and removing such deposits as incident of the normal operation of the engine.

Preparation of the compound is a complex process. One part by weight of pulverulent anhydrous aluminum chloride is stirred into 4 parts of commercial benzol and 2 parts of oleic acid is added. After seven hours the reaction product is washed free of sludge with HCl. By steam distillation excess solvent is removed and then an overhead material consisting of substituted fatty acid, plus some saturated aliphatic acids contained in the original fatty acid is withdrawn. The overhead acid cut is blended with oil before saponifying with lime, and then this concentrate diluted with additional oil to a final product containing 1-2% of lime soap.

* * *

Polymerization. No. 2 076 201, *issued April* 6, 1937; *filed April* 7, 1931; *S. L. Langedijk and A. J. van Peski, assignors to Shell Development Co.; no drawing;* 7 *claims.*

Normally gaseous olefinic hydrocarbons are polymerized in the presence of a complex catalyst resulting from combining in molecularly equivalent proportions an active metal halide of an amphoteric metal with at least one inorganic halide of a metal chosen from group one of the Periodic Table.

* * *

Fuel Spray. No. 2 076 497, *issued April* 6, 1937; *filed Dec.* 29, 1931; *Carleton Ellis, assignor to Standard Oil Development Co.; no drawing;* 6 *claims.*

Solid lump fuel is sprayed with heavy oil heated sufficiently to be fluid. Oils such as kerosine are said to be objectionable for their odor. Petrolatum or other form of wax may be applied also in the form of an emulsion.

* * *

Treating. No. 2 076 524, *issued April* 13, 1937; *filed May* 22, 1933; *F. B. Behrens, assignor to Universal Oil Products Co.; no drawing;* 2 *claims.*

.Deteriorated cracked gasoline containing organic peroxides formed during the deterioration, is restored by treating with burned magnesite. Treatments may be conducted at ordinary temperatures either by percolating the gasoline downwardly through a stationary mass of the calcined material or by stirring the powder with the gasoline, after which it is allowed to settle and is either decanted or filtered.

* * *

Emulsion breaking. No. 2 076 623, *issued April* 13, 1937; *filed March* 16, 1936; *M. De Groote, B. Keiser, L. L. Faure, and A. F. Wirtel, assignors to Tretolite Co.; no drawing;* 7 *claims.*

An emulsion of the water-in-oil type is subjected to a cyclohexylamine salt of an alkylated naphthalene sulfonic acid, in which at least one alkyl group contains at least three carbon atoms and not more than ten carbon atoms.

Patent No. 2 076 624 covers the use of a substance produced by sulfonating an alkali-soluble condensation material obtained by reaction an alkylene oxide body and a resin body derived in part from a phenol.

Knock rating. No. 2 076 519, *issued April* 6, 1937; *filed Dec.* 13, 1935; *J. M. Smith, assignor to Standard Oil Development Co.; one drawing;* 6 *claims.*

Knock rating of a naphtha containing aliphatic and aromatic constituents is improved by adding to a portion a substance containing an aromatic nucleus and having a boiling point above the highest boiling constituent of the naphtha. The mixture is distilled and a series of fractions of successively higher octane numbers are taken off as overheads.

An open chain organic compound of similar boiling point is added to another portion of the naphtha, the mixture distilled, and a series of fractions of successively smaller octane numbers is taken off. A sufficient number of the last overheads of the first distillation are blended with the first overheads of the last distillation to produce a mixture having a suitable distillation curve for motor fuel.

* * *

Conversion. No. 2 076 695, *issued April* 13, 1937; *filed July* 5, 1929; *J. C. Black, assignor to Gasoline Products Co.; one drawing;* 5 *claims.*

A higher boiling fraction and a lower boiling fraction are separated by fractionation and condensation from a vaporized naphtha stock derived by cracking. The higher boiling fraction is subjected to a temperature sufficiently high to dehydrogenate and convert a substantial portion into carbocyclic hydrocarbons. That portion of the dehydrogenated hydrocarbons which has boiling points up to approximately 450° F. is separated by fractionation and then commingled with the lower boiling fraction separated from the first naphtha stock.

* * *

Olefin recovery. No. 2 077 041, *issued April* 13, 1937; *filed March* 9, 1934; *H. S. Davis and A. W. Francis, assignors to Socony-Vacuum Oil Co.; no drawing;* 13 *claims.*

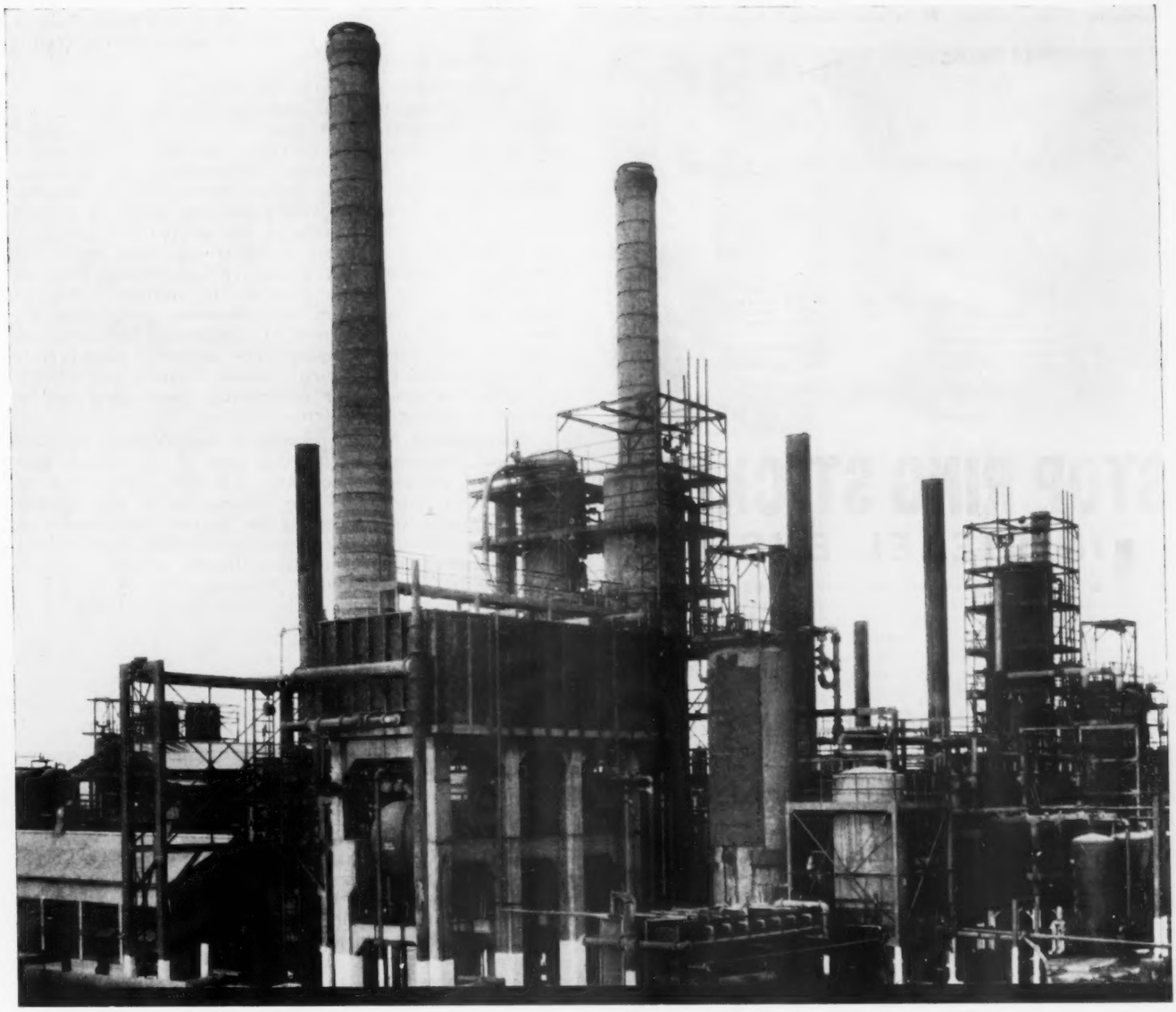
In the method of separating lower olefins from hydrocarbon compositions by means of a reducible metal salt capable of reversibly combining with the olefins in an aqueous solution, the hydrocarbon composition is brought into intimate contact with the aqueous solution for the transfer of olefins into the solution and olefins are extracted by means of a water-immiscible, inert liquid solvent, at a temperature below that at which substantial reduction of the soluble metal salt by the reducing agent takes place. Subsequently the olefin is separated from the liquid solvent.

Principal object was to devise means whereby olefins in an aqueous solution of silver nitrate could be recovered without too much heat and with less loss of silver nitrate. Another object was to obtain the olefins in liquid form and in a convenient physical state for further processing.

* * *

Diesel fuel. No. 2 079 887, *issued May* 11, 1937; *filed Nov.* 1, 1935; *V. Voorhees, assignor to Standard Oil Co. (Ind.); one chart;* 4 *claims.*

A hydrocarbon is cracked so that the saturated paraffin hydrocarbons are partially converted into unsaturated hydrocarbons. Conversion products are treated with a metallic halide polymerizing catalyst to convert the unsaturated hydrocarbons into saturated hydrocarbons. The saturated hydrocarbons are fractionally distilled to remove a fraction having the desired volatility characteristics of fuel oils for high speed diesel engines. At some stage in the process subsequent to the cracking step, unchanged paraffin is precipitated by chilling.



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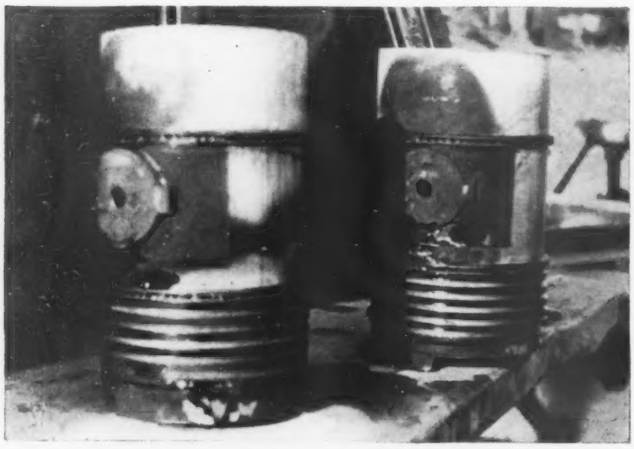

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NATIONAL PETROLEUM NEWS

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Absorption. No. 2 077 344, *issued April* 13, 1937; *filed Nov.* 16, 1934; *J. K. Roberts and P. C. Keith, Jr., assignors to The M. W. Kellogg Co. and Standard Oil Co. (Ind.); one drawing;* 6 *claims.*

Hydrocarbons are recovered from a gas mixture containing substantially non-condensable gases by treating with an absorbing oil. Hydrocarbons are then vaporized and stripped from the absorbing oil, vapors are cooled to a little above the normal temperature in an initial cooling stage and further cooled below normal temperature by indirect contact with expanding gases in a final cooling stage. The majority of the desired hydrocarbons are condensed to a liquid which is separated from the uncondensed vapors and gases. The condensed fraction is fractionated at higher pressure to produce a desired liquid fraction free from uncondensible gases, and an overhead fraction comprised of uncondensible gases and undesired low boiling liquids. The overhead liquid fraction is expanded in the final cooling stage to provide refrigeration necessary for condensing the desired hydrocarbons from the gas mixture.

The method makes possible a considerable drop in operating temperatures for the purpose of cooling and condensing, without expensive equipment, by means of energy generated within the process itself. The system consists broadly in separating the heavier components of the vapor mixture, which components are fractionated under pressure and in utilizing in the process the refrigerating effect obtained by the expansion of the gases separated under pressure during such fractionation.

* * *

Clay polymerization. No. 2 077 494, *issued April* 20, 1937; *filed June* 30, 1933; *E. R. Smoley, assignor to Standard Oil Development Co.; one drawing;* 4 *claims.*

Cracking distillate containing objectionable unsaturates is passed under pressure in vapor form, after being heated above 550° F. but below cracking temperature, through a bed of solid adsorbent material capable of polymerizing objectionable unsaturates. Vapors so treated are passed into a rectifying zone wherein progressive cooling is effected and extensive fractional condensation separately condenses a fraction consisting of higher boiling constituents while retaining the constituents desired in the final distillate vapor form. Condensate so formed is separately withdrawn and the remaining fractionated vapors are passed through a second bed of solid adsorbent material to effect further polymerization.

* * *

Dehydrogenated fuel. No. 2 077 994, *issued April* 20, 1937; *filed Sept.* 14, 1933; *Carleton Ellis, assignor to Ellis-Foster Co.; one drawing;* 2 *claims.*

High anti-knock motor fuel containing aromatic compounds is produced by dehydrogenating a pressure-cracked petroleum in the presence of air at 400-600° F. and under super-atmospheric pressure less than that employed in cracking. A fraction of distillation end-point not exceeding 500° F. and containing knock-reducing bodies is separated. These substances are described as thermolytically-cyclicized bodies.

Dehydrogenation may be carried out by simply admitting air at several points in a chamber through which the vaporized distillate is passing. In this chamber there may be situated a bed of catalytic material such as fragments of iron coated with vanadium oxide, granular aluminum coated with a mixture of molybdenum and vanadium oxide or other appropriate catalytic material.

* * *

Regenerative contact mass. No. 2 078 951, *issued May* 4, 1937; *filed Aug.* 7, 1935; *E. J. Houdry, assignor to Houdry Process Corp.; no drawing;* 5 *claims.*

An adsorptive siliceous contact mass incorporating 0.5 to 1.5% of manganese or a manganese compound for the purpose of promoting regeneration by oxidation. Oxidizing temperature is 750-1000°F.

Solvent extraction. No. 2 079 035, *issued May* 4, 1937; *filed Sept.* 10, 1935; *T. A. Petry, assignor to Socony- Vacuum Oil Co.; no drawing;* 8 *claims.*

Naphthenic substances of low viscosity index are removed from lubricating oil stock with benzylamine. Oil stock is mixed with sufficient benzylamine to produce two liquid phases—a solvent phase consisting mainly of benzylamine and an oily phase consisting mainly of the paraffinic part of oil and some benzylamine. The oily phase is removed from the solvent phase and the remainder of the benzylamine from the oily phase to obtain a refined lubricating oil.

* * *

Cracking. No. 2 078 899, *issued April* 27, 1937; *filed July* 23, 1932; *H. Sydnor, assignor to Standard Oil Development Co.; one drawing; one claim.*

Cracking process in which the fresh feed is introduced into a separator held under the pressure of the soaking drum and involving the so-called "quenching" principle.

Although the tube and tank process is capable of producing a high knock rating gasoline by using higher cracking temperature it is said to have the serious limitation of a tendency of the release lines and valves immediately adjacent to the drum to clog due to the accumulation of coke. This coking difficulty is eliminated by transferring the cracked material from the soaking drum into a separator held substantially under the same pressure as the soaking drum and by introducing fresh feed into the separator to cool down its contents and check the further cracking.

Among other advantages obtained are the higher than usual preheat of the oil entering the heating tubes resulting from the elimination of recirculating cold tar to the bottom of the separator for cooling and the use of the excess heat content of the cracked effluent from the soaking drum for preheating the fresh feed.

A part of the fresh feed enters the digesting zone near the point of withdrawal of the heated oil. The part which enters the separator effects vaporization of the fresh cracked oil and removes oil vapor from the separator to be fractionated under lower pressure thus obtaining a relatively clean distillate charging stock. Unvaporized bottoms from the separating zone is separately removed from the system without being subjected to cracking.

* * *

Cracking. No. 2 079 168, *issued May* 4, 1937; *filed June* 7, 1934; *J. B. Heid, assignor to Universal Oil Products Co.; one drawing;* 3 *claims.*

Reflux condensate consisting of insufficiently converted components is separated into selected relatively low-boiling and high-boiling fractions. The low-boiling fractions are subjected to independently controlled conversion conditions and the resulting products introduced, together with high boiling fractions of the reflux, into a coking chamber. Vaporous products from the coking chamber are fractionated in admixture with vaporous conversion products.

* * *

Conversion. No. 2 079 187; *issued May* 4, 1937; *filed April* 30, 1932; *J. D. Seguy, assignor to Universal Oil Products Co.; one drawing;* 8 *claims.*

High yields of motor fuel of maximum anti-knock value are obtained by conversion of heavier oils. Reduction of residual conversion products to coke of low volatility produces high yields and retreatment of a regulated portion of the light liquids products gives high anti-knock value. Re-treatment is accomplished under reforming conditions in either vaporous or liquid state.

These two features are practiced in such a way that one augments the other, i. e. the highly heated distillate product of the system is utilized as a heat carrying medium to assist coking the residual oil and devolatilizing the coke.

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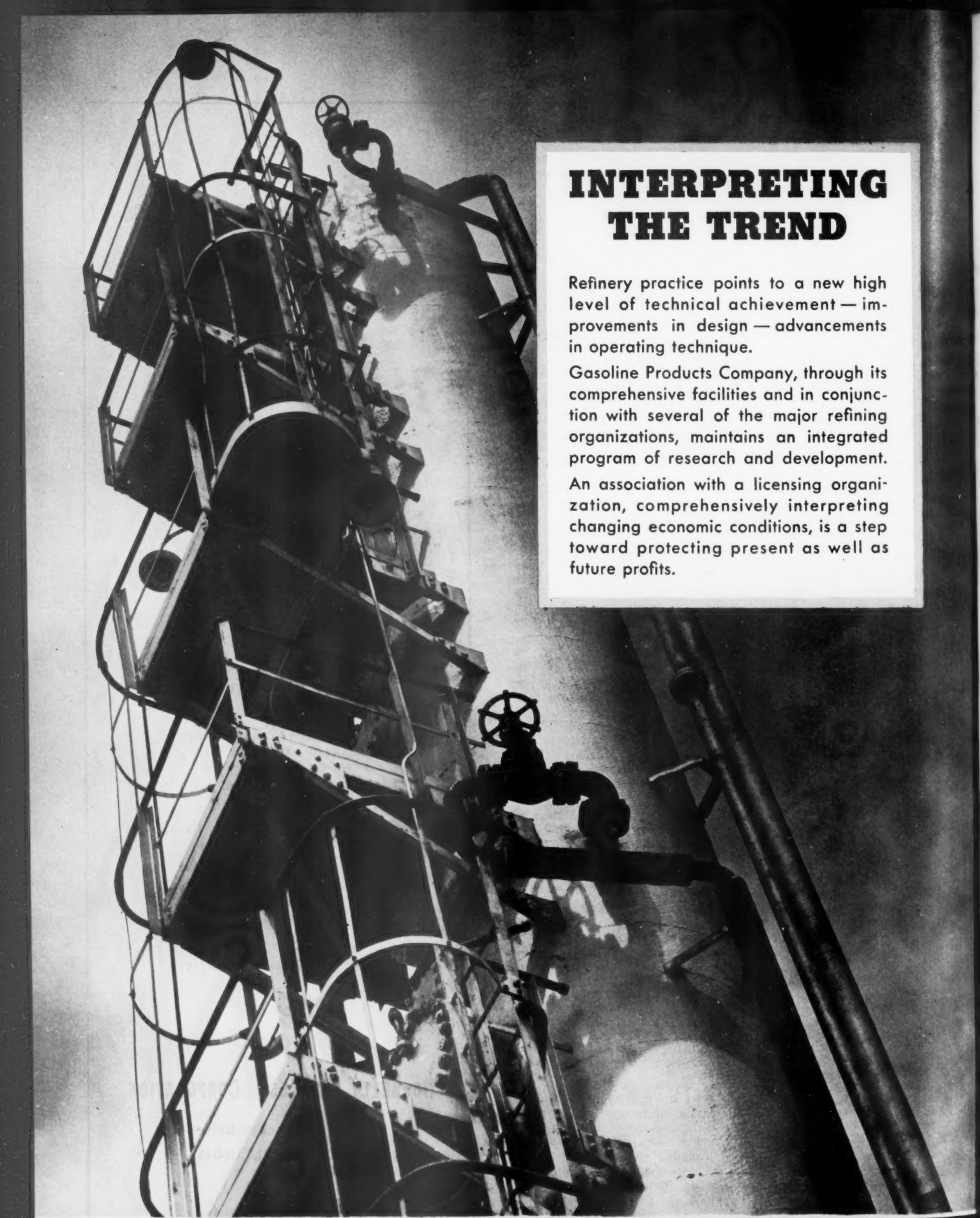

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New Japanese Patent

Uses Soaking Coil and Quenching

JAPANESE technologists, in their efforts to develop a petroleum industry and refining technology in Japan, are using every engineering means to make this industry self-sustaining and efficient, according to information received from various sources. Far-reaching exploration has gone forward in Sakhalin and other areas controlled by Japan, including Taiwan (Formosa), it is reported, while refineries have been built in Japan proper. Some of these plants are of American design, for instance one built a few years ago by the M. W. Kellogg Co. Others were developed by Japanese engineers, including application of cracking technology in commercial units.

Following is a short general description of a unit recently built in Japan for the Nippon Sekiyu Co. It was designed by M. Mizuta and I. Kimura, to whom the patent was issued; number and date of the patent are not known.

The notable features of the design are the type of "automatic" pressure control valve used, and the use of a tube soaking section, separately fired, which is referred to in the translation (from the original Japanese) as a "reaction chamber." While inadequate in details of the plant and of many of its operating conditions, the description gives a fair idea of the principles employed in the entirely Japanese development. The translation follows.

This plant consists of three parts, namely, a cracking furnace, reaction tubes which complete the cracking process and a reaction chamber which accommodates the reaction tubes. The furnace is also equipped with cracking tubes, where crude oil is heated at first for a suitable period of time under necessary pressure and high temperature.

The crude oil thus heated is led into the reaction tubes in the reaction chamber where the cracking process is completed. During that period the chamber prevents the lowering of temperature. When the oil thus cracked leaves the reaction tubes, it is mixed with oil at a lower temperature, so that the temperature of the cracked oil is reduced suddenly. After the pressure of the oil, too, has been reduced by a pressure reducing valve, the material is passed through an evaporator and then a rectifier.

This invention has two objectives, namely, to produce gasoline by cracking higher boiling hydrocarbons into lower boiling ones during an equitable space of time under suitable pressure and high temperature, and to secure safety of operation by reducing as soon as possible the high temperature and high pressure indispensable to the process.

Detailed Explanation

Crude oil is led into the cracking furnace, 1, through a tube equipped with two "heat switches," 8 and 9, by means of a pump, 7, from an oil storage tank (omitted in the figure). The material thus supplied is first cracked in a cracking tube still, 10, installed in the furnace, at a temperature of 450° C. (842° F.), or more (heat being supplied by heavy oil or gas). It then passes out into the reaction tubes, 11, housed in the reaction chamber, 2, where it is cracked more completely. The length of this tube is determined so that it may require 5 to 20 minutes for the material to go through. During this process the temperature in the chamber must be maintained by burning fuel in a grate, 12. This is necessary because the length of the tube and the heat-absorbing action of the cracking process may cause the temperature to drop.

In plants equipped with a "flash chamber" in the reaction chamber, part of the crude oil remains in the chamber unreplaced by new supply of material. The remaining material is liable to decompose to carbon and precipitate in the chamber. In this plant, however, the material is completely cracked in the tubes. However, carbon will be forced out even if formed because the speed of passage through the tubes is 3 to 10 feet per minute.

Another feature of this plant is the possibility of

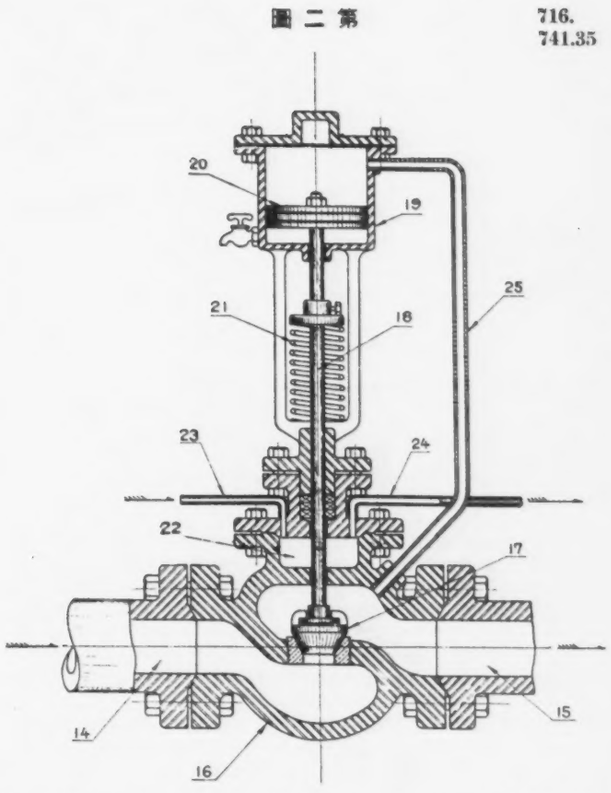


Fig. 2. Cross-sectional drawing of the automatic pressure-reducing valve used in the Japanese cracking system

● This Japanese-designed cracking unit includes furnace pipe-still, and a separate "reaction chamber" which appears to consist of a soaking coil where temperature is maintained by separate firing of the enclosing chamber or furnace. A pressure-reducing valve is also used, "automatically" operated and actuated by the pressure of the outgoing cracked charge.

From the meager data given in this description, relatively low temperatures of 900° F. and below are used; the main purpose of the plant, whether to produce a maximum of motor fuel of distillation range comparable to American gasolines, or to produce considerable amounts of higher boiling, burning naphthas along with gasoline, is not stated in the article, which is translated from the original Japanese.

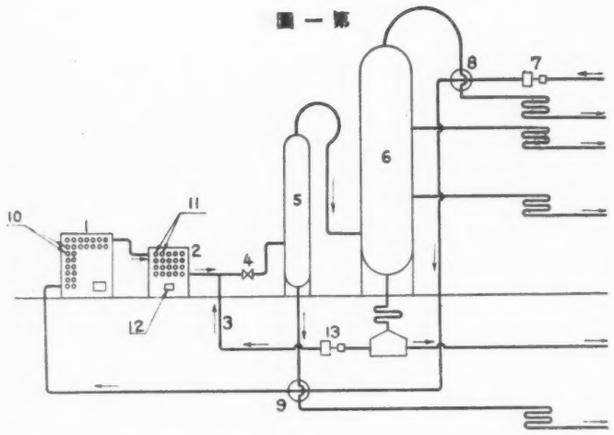


Fig. 1. Simplified flow diagram of a cracking unit, built for the Nippon Oil Co., Japan, based on the Mizuta-Kimura patent

various arrangements of tubes to increase or decrease the time suitable for the process. Therefore, every kind of hydrocarbon, either paraffin which is easily cracked or others which are refractory, will be treated under suitable pressure and temperature for a suitable space of time.

The cost of the cracking tubes is, therefore, lower than in plants equipped with "flash chambers," and the cost of gasoline will be reduced.

The oil cracked at high temperature, practically 450° C. or more, will suddenly be cooled down to about 390° C. (734° F.), by being mixed with other oil of lower temperature which is supplied to a tube, 3, by means of a pump, 13. Then it passes through the pressure reducing valve, 4.

The mixing of the cracked material with oil at a lower temperature before the pressure-reducing step is one of the most important achievements in this patent, having three major merits:

1. The immediate reduction of temperature increases safety in operation. In general, high temperature as well as high pressure is unnecessary when the material has been cracked.

2. The rapid reduction of temperature prior to passing through the pressure reducing valve will prevent the valve from being deformed by the high temperature of cracked material. In other plants, the pressure reducing valve is out of order frequently due to heat expansion.

3. The lowering of temperature before the reduction of pressure will evade various defects of the ordinary method, in which the cooling process is liable to cause irregularity of pressure and thus retard the distillation process because it is done after the pressure reducing process. As is generally known, regularity in the pressure of cracked oil is indispensable for distillation.

The cold oil to be utilized as a temperature reducing medium will be obtained by various means, but in Fig. 1 such oil is obtained from the rectifier, 6.

Fig. 2 shows the pressure reducing valve covered by the patent on this process. It is best to use automatic control on this valve, because the pressure in the evaporator, 5, must always be maintained at the desired level.

The figure shows the valve body, 16, the inlet opening 14, and the exhaust opening, 15. The valve is connected with the cylinder, 19, by means of a steel tube, 25, and a spring, 21, is installed between the cylinder and the valve to support a piston, 20, in the cylinder.

If the pressure of the cracked oil supplied from the inlet opening is higher than the fixed level, part of the pressure is led through the tube, 25, to the piston which is forced down. The downward movement of the piston is transmitted through the spindle, 18, to the valve, 17, which will interrupt the passage of oil of higher pressure. If, on the other hand, the pressure of inlet oil is lower than the fixed level, the spring, 18, forces up the piston and opens the valve, 17. In this manner, the pressure of the exhaust oil is kept at a fixed level.

The box, 22, is installed at the point where the spindle, 18, penetrates the valve body, 16, and it is connected with steel tubes, 24 and 23. The cooled oil is always circulated in these tubes and the box, and its pressure is kept at all times slightly higher than the fixed level to prevent the heated oil at the fixed pressure from leaking.

The cracked oil thus passed through the pressure reducing valve is flashed in the evaporator, 5, and then is led into the rectifier, 6.

During the whole process, the pressure in the cracking and reaction tubes is kept at 100 to 800 lbs., and the pressure in the evaporator and rectifier can be maintained at less than 40 lbs., thereby increasing safety of operation.

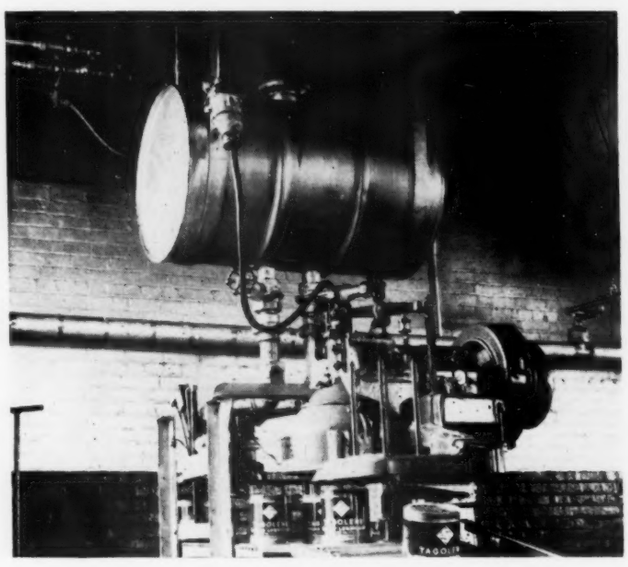
Some examples of pressure and temperature levels, varying according to materials, are given in the following:

Materials	Crude Oil	Light Oil	Heavy Oil
Pressure in Lb. in the . . .			
Cracking and Reaction Tubes	300	500	200
Evaporator	20	20	20
Rectifier	10	10	10
Temperature in °F. . . .			
At the outlet of cracking furnace	896	896	914
After passing pressure reducing valve	716	734	752
Specific Gravity of Material	0.85	0.87	0.94
Outputs in Percentage			
Volatile Oil	60	50	40
Naphtha	15	10	10
Heavy Oil	20	35	45
Gas and losses	5	5	5

"Constant Head" Filling Drum

Because of the difference in viscosity of various greases manufactured in the refinery at El Dorado Kansas, Skelly Oil Co. employes installed a constant head drum between the kettle outlet and the canning equipment. An ordinary 55-gallon steel drum was used which was equipped with a nipple on one side, in size corresponding to the outlet piping of the steam kettle. On the reverse side, two nipples were attached, equipped with gate valves, to connect with the canning equipment.

The object of this drum is to insure a constant head of greases flowing from the kettle, in order that the canning machinery will fill uniformly. The upper connection was flanged to the outlet of the kettle, but the weight of the drum and contents is supported by straps of steel securely attached to the steel girders of the ceiling, pulled tightly against the flanged connection to promote rigidity.



Filling drum, placed above filling machine in Skelly plant, to provide constant head in filling cans

● No matter what—No matter where—If the need is petroleum processing and equipment attuned to high profits, ALCO has the technical and manufacturing facilities to give the correct answer.

ALCO designs and equipment are in daily use in refining centers the world over.

ALCO PRODUCTS

30 CHURCH STREET, NEW YORK, N. Y. *Inc.* Artillery House, Artillery Row, London, S. W. 1, England. Cable Address: Alproducts.

DIVISION OF AMERICAN LOCOMOTIVE COMPANY

Prize Operating Tricks

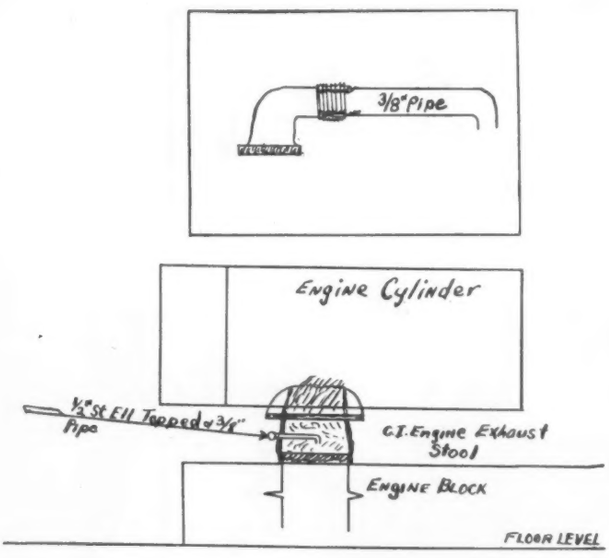
FOR THE NATURAL GASOLINE MANUFACTURER

Exhaust Protector

D. C. Miller, repairman, Skelly Oil Co.

Most of the cast iron exhausts on Bessemer 80 engines that use water for cooling break when water has been turned off and is turned on again while the exhaust is hot. Breaking can be prevented if water is kept from coming in contact with the hot stool at any one point.

The ½-inch street ell normally used for carrying the



water in is tapped out for a ⅜-inch pipe. A piece of ⅜-inch pipe six inches long is threaded on one end and bent on the other. Installed in the street ell with the bent end extending outward, entering water is sprayed each time the engine exhausts.

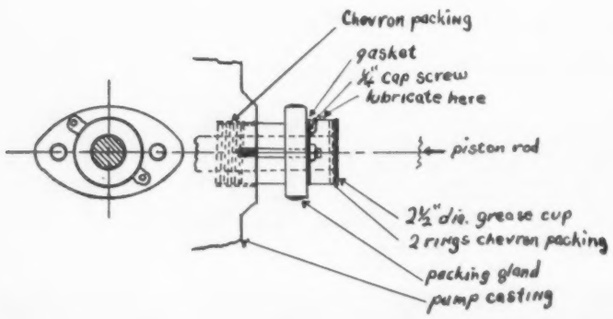
* * *

Lubricator and Rod Wiper

Arthur W. Edson, chief operator, Skelly Oil Co.

The life of chevron packing is more than doubled and reciprocating pump rods are kept from scoring by a lubricator and rod wiper made of a grease cup cap 2½ inches in diameter.

A hole is cut in the top to fit a 1½-inch piston rod



● Not all of the operating kinks entered in the kink contest of the Natural Gasoline Assn. could win prizes but many that did not deserve special attention and may suggest new ideas. A few of these Kinks that did not win prizes are included below.

Operating kinks were presented at the annual meeting of the N.G.A. at a special session at which plant operators discuss technical subjects and exchange ideas. The session was initiated in 1936 and its success prompted a repetition of the feature on this year's program.

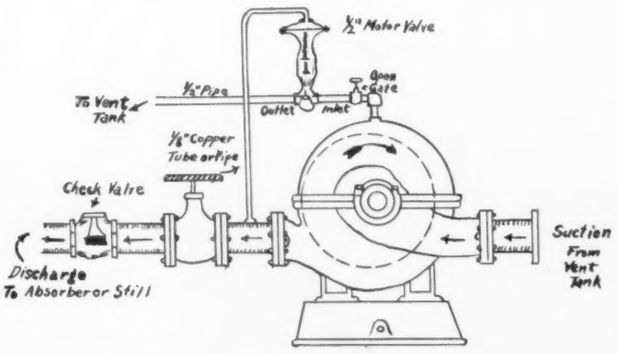
and wings are welded to the sides for fastening it to the packing gland with two ¼-inch cap screws. Two rings of chevron packing are placed in the back side to hold the lubricant and keep the rod wiped clean. A ring gasket is placed between the grease cup cap and packing gland to keep it from leaking. A small grease cup, zerk fitting or alemite fitting can be used to fill lubricator with graphite paste.

* * *

Centrifugal Pump Primer

B. F. Gilstrap, repairman, J. E. Crosbie Inc.

An automatic means of priming a centrifugal pump consists of a half-inch bleeder line from the top of the pump to a vent tank. The line is kept closed while the pump is operating by a motor valve held closed by discharge



line pressure. If the pump should kick off, dropping line pressure, the motor valve would open the bleeder line. On restarting the built up pressure will close the valve again.

* * *

Absorption Oil Reclamation Unit

L. P. Clarke and O. A. Greene, plant supt. and chemist, Phillips Petroleum Co.

An absorption oil reclamation unit distinguished for its simplicity and economy, both of construction and operation, and for its efficiency in removing residue and foreign material, was constructed from salvaged parts.

The still shell is a 10-foot piece of 20-inch standard

It's Faster . . .

It's Continuous . . .

It's More Economical . . .

OLIVER PRECOAT FILTRATION for Contact Clays

FOR many months, a 5′ x 4′ Oliver Precoat Filter has been operating in an important oil refinery removing the contact clays from a 68 seconds S.U. viscosity lube oil.

The results are most interesting. Briefly, here are four of the advantages that the refinery found by contrasting Oliver Precoat Filtration with the former methods:

- ★operations are faster because the desired clarity can be obtained in one step; final blotter press clarification is not needed.
- ★operations are continuous in that the filter runs 7 days without interruption; 1 hour for "precoating"; then back to the 7 days continuous run again.
- ★no constant supervision with frequent manipulation of valves, etc. is needed.
- ★much less oil is retained in filter cake; hence more oil is recovered.

As stated above, these results are most interesting and significant. Laboratory and semi-commercial tests on other products indicate that Oliver Precoat Filtration is markedly superior to batch filtration both as to results and costs.

In writing for further information, tell us to what phase of your production you would like to apply Oliver Precoat Filtration.

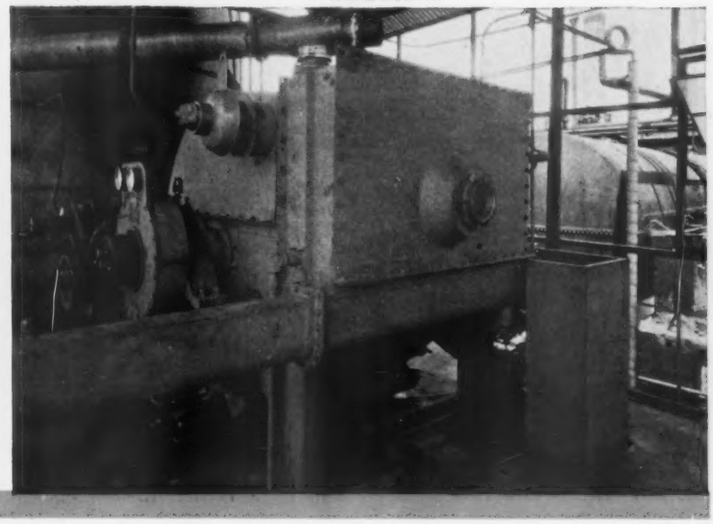
OLIVER UNITED FILTERS INC.

221 N. LaSalle St., Chicago, Ill.

351 California St., San Francisco, Calif.

33 West 42nd St., New York City

Two views of the Oliver Precoat Filter referred to above



pipe to which top and bottom heads of iron plate were welded. The heating element consists of three concentric coils of ½-inch pipe from a heat exchanger. Ends were welded into headers of one-inch pipe extending through welded connections to the still shell.

Operation of the unit is continuous. System oil is fed into the unit through a quarter-inch motor valve controlled by a kidney float. The steam coil maintains a temperature of 322° F. which, aided by a vacuum of 11 to 12 inches of mercury and continuous agitation by gas, causes vaporization of the oil. Oil vapor is carried away by the vapor line connected to the still head, condensed and collected. The only attention required is a few minutes every two or three days to blow down the accumulator tank and to blow off the bottom sediment from the still.

A gradual cleaning of the system oil has resulted from use of the unit. Starting with oil testing 10% residue, with 38° A.P.I. gravity, and a dark murky brown color, after three months residue dropped to 2%, gravity had raised to 42°, and color had cleared to a medium red.

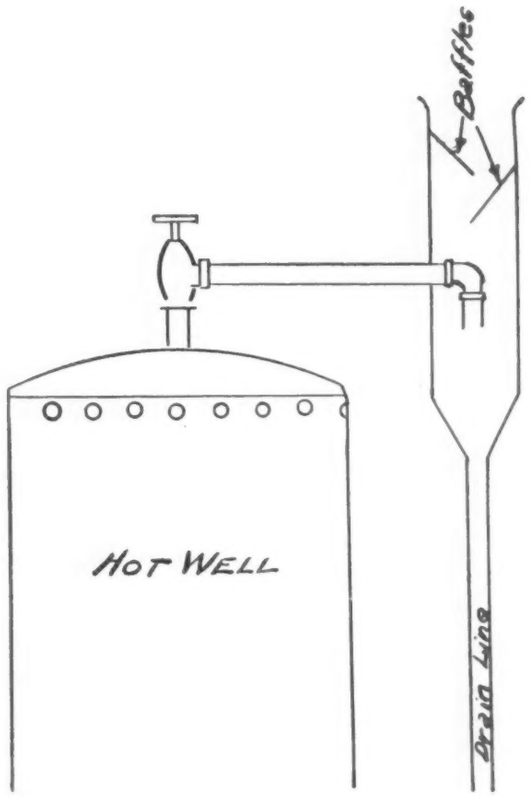
Estimated saving in labor costs alone amounted to $1500 annually. There have been no coil shut-downs for cleaning. Being of only 50 gallons capacity no large additional amount of absorption oil is required as do the large batch types of reclamation stills.

* * *

Drip Pan Serves As Safety Device

Jesse Glisson, engineer, Skelly Oil Co.

A relief drip pan consisting of a square steel box with baffles to prevent condensate from carrying over the side of the tank is a safety device. When using the relief valve on a hot well tank, steam is popping to the air most of the time. Without the drip pan it is sometimes impossible to close the discharge or relief valve due to freeze up or gases. When used on a hot well where water make-up is used, it may prevent burning someone when the regulator is shut off. The device can be used also as a return to pit or tank for recovery.



Important Symposia Before A. C. S. September Meeting

CLEVELAND — A symposium on the characteristic properties of hydrocarbons will be presented before the Petroleum Division of the American Chemical Society, at its 94th meeting in Rochester, Sept. 7. Thomas Midgley, Jr., internationally known for his researches in the fields of anti-knock compounds, refrigeration, etc., will preside over this symposium, in which at least seven papers will be given.

Dr. F. C. Whitmore, Pennsylvania State College, will preside over a second symposium on the chemical utilization of petroleum hydrocarbons, which will be held Monday, Sept. 6. A dozen papers will be given, presenting results obtained in the foremost petroleum research laboratories of the country.

In a general meeting of the petroleum division Monday afternoon, Sept. 6, presided over by Dr. J. C. Morrell, chairman of the division, several reports of research programs will be made. The division dinner will be held Tuesday evening Sept. 7, which will be addressed by R. F. Marschner, Standard Oil Co. of Indiana, and by Drs. von Grosse and Ipatieff, Universal Oil Products Co.

On Sept. 9 and 10 a joint symposium on gaseous combustion will be presented before the divisions of gas and fuel chemistry and of industrial and engineering chemistry. Detailed programs of these meetings will appear in the Aug. 25th issue of Refining Technology.

New West Texas Crude Low In Sulfur

WASHINGTON, Aug. 5.—A low-sulfur crude containing 35% of gasoline is in production from 6000 feet in the Ordovician lime of the West Texas Permian Basin. The Bureau of Mines finds, from its analysis by the Bureau Method that the crude has 0.22% sulfur, 34.8% gasoline and naphtha, 20% of kerosine distillate and 25% of gas oil and heavy distillate suitable for cracking.

The Sand Hills Field from which this sample was taken is the second producing area in this formation, the first being the Big Lake Field, discovered in 1928. The new crude is described as paraffin-intermediate base with a gravity of 44.7° A. P. I., and is produced from a dolomite reported as "probably the Ellenberger Formation". Below is given the approximate summary of the Bureau Analysis.

Analysis of crude from Ordovician Lime, Crane Co., West Texas.

Approximate Summary

	Per cent	Sp. gr.	A.P.I.	Viscosity
Light gasoline	11.0	0.665	81.3	
Total gasoline and naphtha	34.8	.716	66.1	
Kerosine distillate	20.1	.792	47.2	
Gas oil	12.4	.833	38.4	
Nonviscous lubricating distillate	8.4	0.847-0.875	35.6-30.2	50-100
Medium lubricating distillate	3.9	.875-.887	30.2-28.0	100-200
Viscous lubricating distillate	....	....	.....	Above 200
Residuum	18.4	0.936	19.7	
Distillation loss	2.0	.....	.....	

The detailed analysis of the crude oil is given below:

General Characteristics

Specific gravity 0.803 A.P.I. gravity 44.7°
Per cent sulphur 0.22 Color greenish black
Saybolt Universal viscosity at 77°F. 40 seconds
Saybolt Universal viscosity at 100°F. 37 seconds

Activities OF EQUIPMENT MANUFACTURERS

Alloy Castings

American Manganese Steel Co., Chicago, has published a new folder giving applications of its Amsco alloys. Included are still tube supports, hangers and beams and such items as chemical solution impeller blades, furnace grates and superheater tube supports.

* * *

J & L Opens at Tulsa

A district sales office has been opened in Tulsa by the Jones & Laughlin Steel Corp., Pittsburgh, with Carl E. Swindler as district sales manager. Mr. Swindler has been with the company for a number of years, and always in this particular territory.

* * *

Largest Diesel Order

The largest single shipment of high-speed, heavy-duty Diesel engines for commercial vehicles ever made in the Diesel engine industry was the one of 100 Hercules DJXB engines made by Hercules Motors Corp. to General Motors Corp. recently. These will be installed in Chevrolet truck chasses for export and were shipped to the GM export plant at Weehawken, N. J.

* * *

Laminated Fibre Gears

Continental Diamond Fibre Co., Newark, Del., has issued a new bulletin describing celeron laminated fibre gears. The bulletin gives data in formula and tabular form which will be useful to the engineer in calculating horsepower rating, etc.

* * *

Alloyed Cast Irons

Nickel cast iron data is given in a new bulletin on Alloyed Cast Irons in Petroleum Refining Equipment just published by the International Nickel Co., 67 Wall St., New York.

The new bulletin reports by table, chart and text on the properties of cast irons including abrasion, corrosion, thermal expansion, hardening, impact resistance, machinability, uniformity, strength and high temperature characteristics such as creep strength, growth, scaling, heat resistance, oxidizing and tensile strength at high temperatures and after being subjected to such temperatures.

Also given in the bulletin are applications for nickel cast iron in the refinery.

* * *

Diesels Used In 100 Spots

Among the 100 or more instances where Diesel engines can supply power more advantageously and more economically are in the various branches of the oil industry, the Caterpillar Tractor Co. points out in its new booklet "Places for Power Supplied by 'Caterpillar' Diesel Engines." The company claims to be the world's largest distributors of Diesel engines. Its offices are at Peoria, Ill.

It illustrates the use of these engines in oil wells and in pumping oil and gasoline, in loading operations and pipeline pumping, giving actual figures on engine operating costs per hour and amount of work done within a specified time.

* * *

Automatic Control

The Stabilog system of automatic control of temperature, pressure, level and flow in continuous process, which takes into consideration the rate of change of the condition being controlled, is described in "Stabilog Process Control in Industry," the new 32-page booklet published by The Foxboro Co., Foxboro, Mass.

Features of these controllers, such as automatic reset mechanism which allows the instrument to balance out at the control point with the valve in any position, are described.

There is also a discussion of throttling control action and other engineering details.

* * *

Pipe Fittings

Bonney Forge & Tool Works, Forged Fittings Division, Allentown, Pa., has just issued Bulletin WT23, describing WeldOlets and ThredOlets, the patented, drop-forged pipe fittings for making branch pipe connections by welding.

The manufacturer claims that by using these fittings, branch lines may be taken off the main pipe without any cutting, threading or fitting of the main line, either before or after it is in position.

No special training is needed for their installation—any welder of average experience being able to do a first-class job with the assurance of obtaining leak-proof joints.

* * *

Sucker Rods

Folder by Bethlehem Steel Co., Bethlehem, Pa., describes its A.P.I. Normalized Sucker Rod, forged in pyrometically controlled furnaces and then passed through successive forging dies constructed to give proper grain flow which will eliminate cold shuts and folds. Each rod is given a full-length normalizing treatment to produce maximum fatigue resistance. Special equipment prevents bending and warping during cooling. Threading is done after heat-treatment. The folder gives analyses of copper-bearing and corrosion resisting rods.

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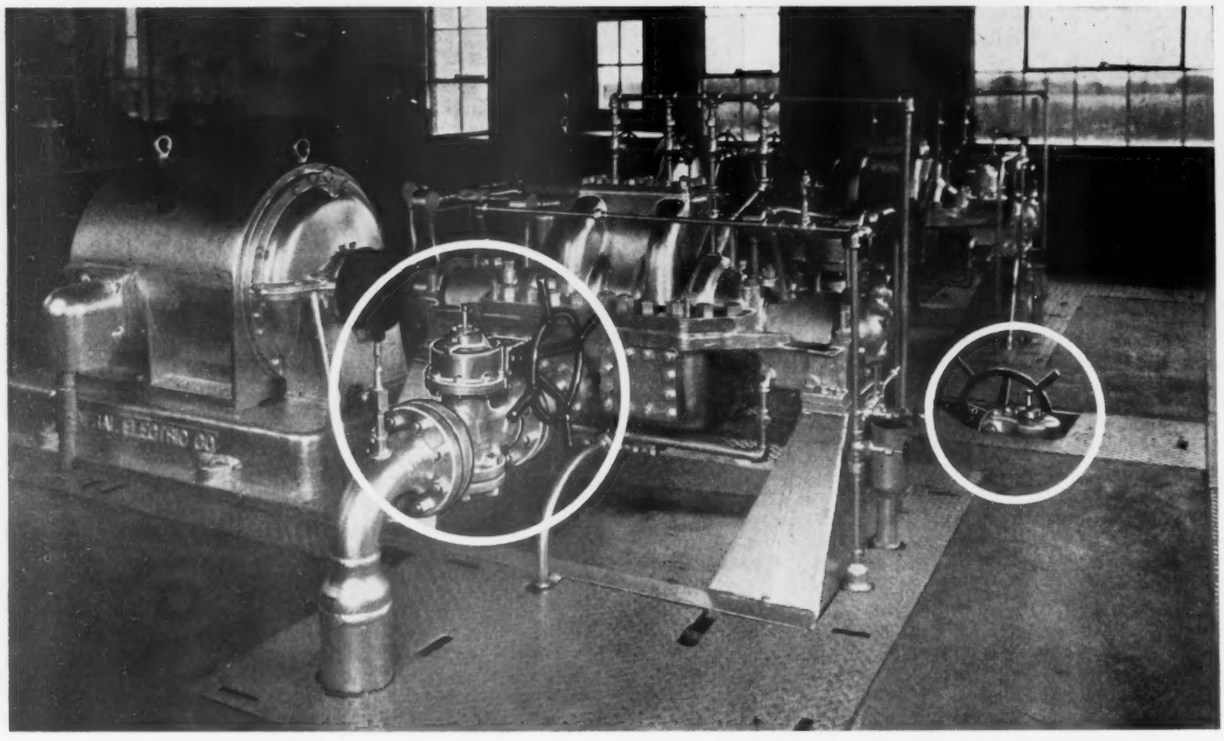
PUMPING GASOLINE AT 1000 LBS.

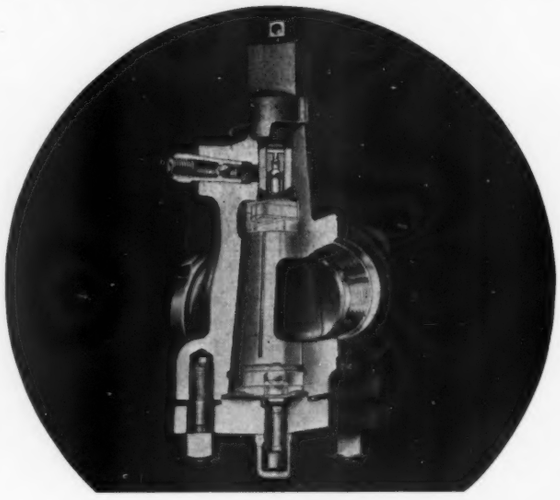


The photo shows two of many 6" Nordstrom Hypreseal Valves used in pumping stations on a long gasoline pipe line in the East. These valves control 1000 lbs. pressure without a trace of a leak and have been in service for years with absolutely no trouble.

•

Hypreseals are also extensively used on production lines, from boilers to mud pumps, on mud lines, Xmas trees and are particularly essential in solvent and treating plants for handling high temperatures and working pressures to 5000 lbs.

PATENTED "SEALDPORT" LUBRICATION



NORDSTROM HYPRESEAL

Lubricated Valves

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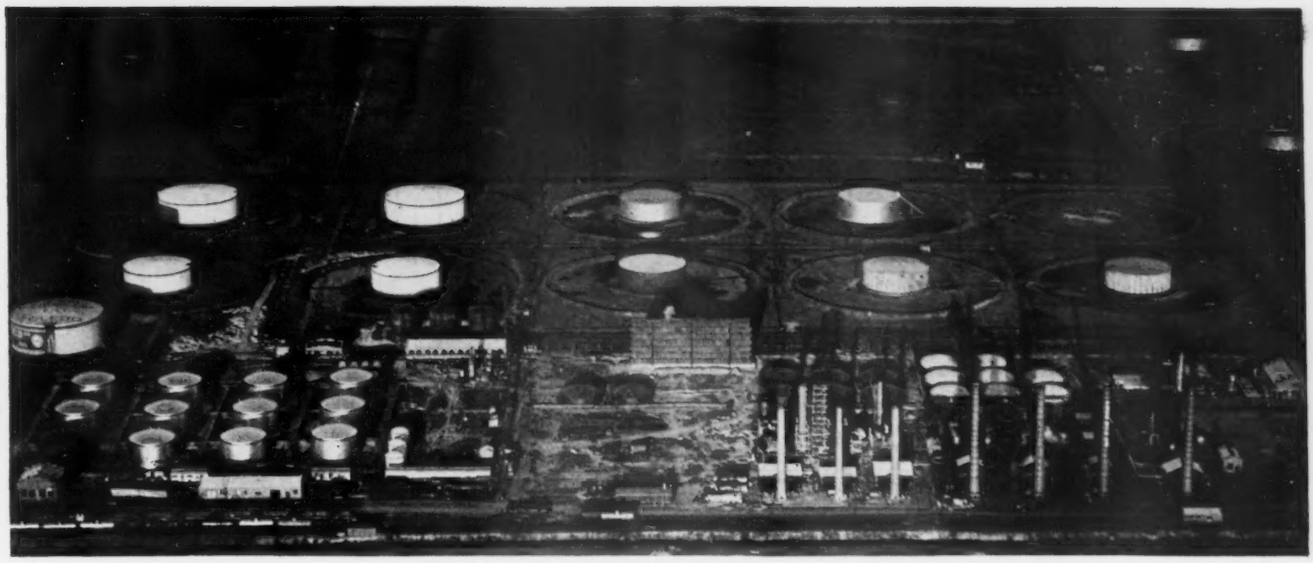


The Toledo refinery from the air during construction of unit number one. The second unit is being built in the vacant area in the center in front of the water cooling tower

Combination Cracking Units Expand Pure Oil Plants

By M. G. VAN VOORHIS
N. P. N. Staff Writer

COMBINATION cracking units which take crude oil and discharge finished products, will modernize four refineries of The Pure Oil Co. Unit number one is already in operation at Toledo. The second unit is now under construction adjoining the first. Cost will be around $2,700,000. Other units will be constructed at Heath, near Newark, Ohio, at Smiths Bluff, Texas, and at Cabin Creek, W. Va. All will be of Lummus design and construction.

Four separate cracking operations take place in the unit now operating, two of which are in separate coils of the same furnace. These are a viscosity-breaking operation and vapor phase cracking of heavy gas oil. The other furnaces are employed in reforming stripped naphtha and cracking light gas oil.

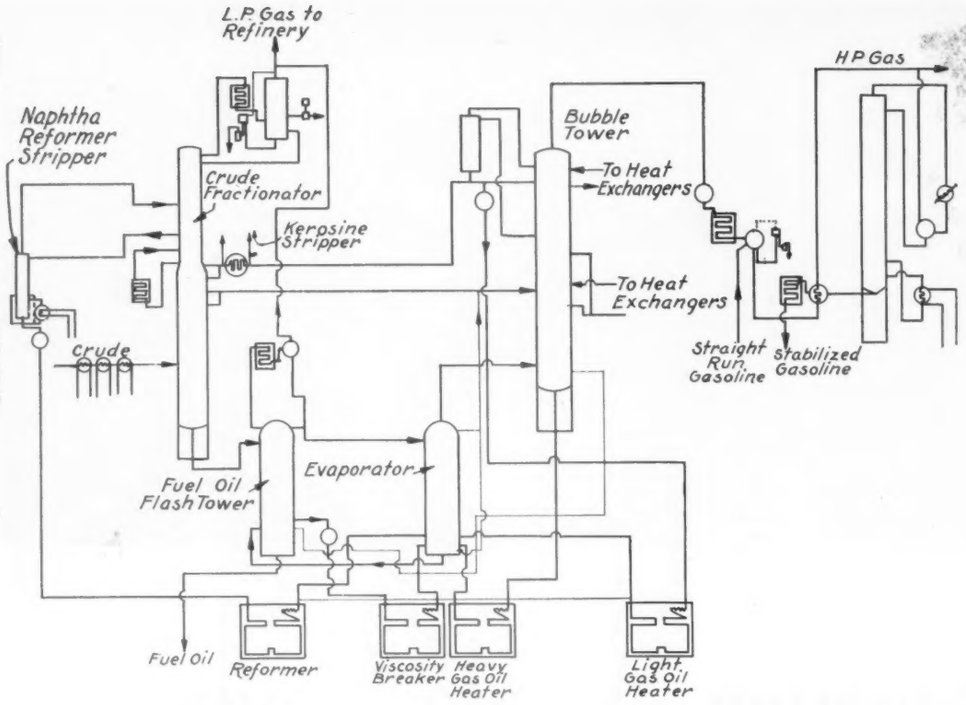
In the process, crude oil passes into a crude fractionating tower after gaining heat through heat exchange with waste heat from the cracked gasoline fractionating tower. Three heat exchangers connecting with different levels of the tower supply the heat. A naphtha cut from the crude fractionator passes to a stripping operation also supplied with heat by exchangers carrying gas oil from the bubble tower. The heaviest fraction of the naphtha is withdrawn and pumped through the reforming furnace and thence to a high pressure evaporator. Light gas oil or kerosine is also withdrawn from the crude fractionator and pumped direct to a second cracking furnace from which it also passes to the evaporator.

A still higher boiling fraction is pumped direct to the bubble tower. Feed for the vapor phase section of the third heater is taken from the base of the bubble tower and is largely this crude fraction. The boiling range of this stock is regulated by the temperature of the evaporator top by means of the gaseous products which enter the bubble tower below the level of entrance of the crude fraction so as to exclude high boiling fractions unsuitable for the vapor phase temperatures. After passing through its section of the heater and attaining a temperature of about 960° F., the vapor phase cracked stream emerges to join the discharge from the other three cracking furnaces in the high pressure evaporator.

The heaviest crude fraction from the bottom of the crude fractionating tower is pumped to the fuel flash tower to be preheated with hot flashed vapors and is then dis-

A redwood cooling tower of latest design is used in connection with Pure's combination unit

This view of towers, furnaces and piping shows the compactness of the unit



Simplified flow diagram of Pure's combination cracking plant at Toledo showing the principal piping connections

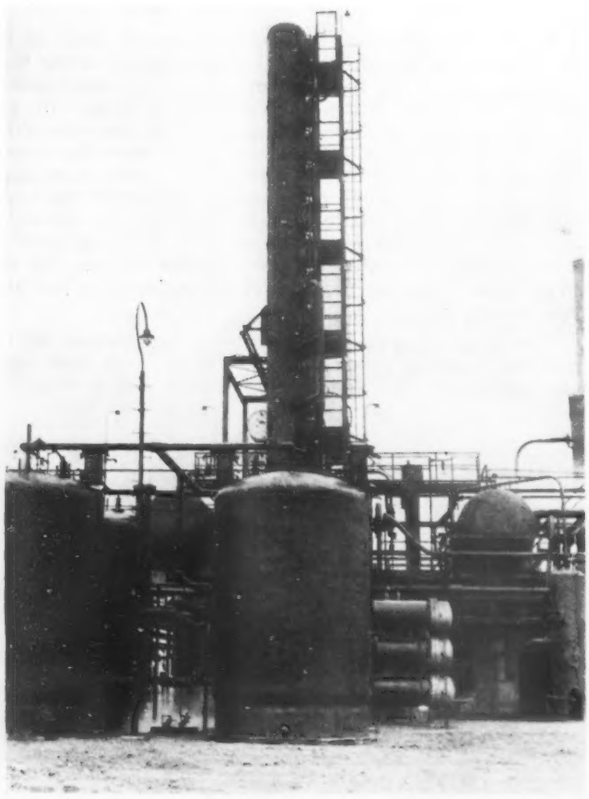
charged through the viscosity breaker heater to the high pressure evaporator.

The composite fuel oil in the evaporator, under about 200 pounds pressure, is released to the fuel oil flash tower, under low pressure, where it is reduced down to the desired viscosity and the evolved cycle stock vapors are returned to the cracking system with the fraction of the crude which is received from the bottom of the crude fractionator.

The bubble tower is also connected to receive the kerosine cut or a portion of it from the crude fractionator, if desired. This enters above the mid-point of the tower and above the entering point of the higher boiling fraction from the crude fractionator. Both pass in counter-current to the vaporous products from the evaporator before being discharged to the cracking system.

The stabilizer operates as an integral part of the system using recycle gas oil as the source of heat. It receives gaseous products from the top of the bubble tower combined in an accumulator with straight run gasoline.

The fact that the fractionation of the major portion of the gas is done under the relatively high pressure of 200 pounds has been pointed out by O. B. Wendeln, refinery superintendent, as an advantageous feature. This has eliminated the necessity for an extensive gas compression plant such as has been used heretofore with low pressure fractionation and high gasoline content of the gas.



The stabilizer tower as seen over the desalting units

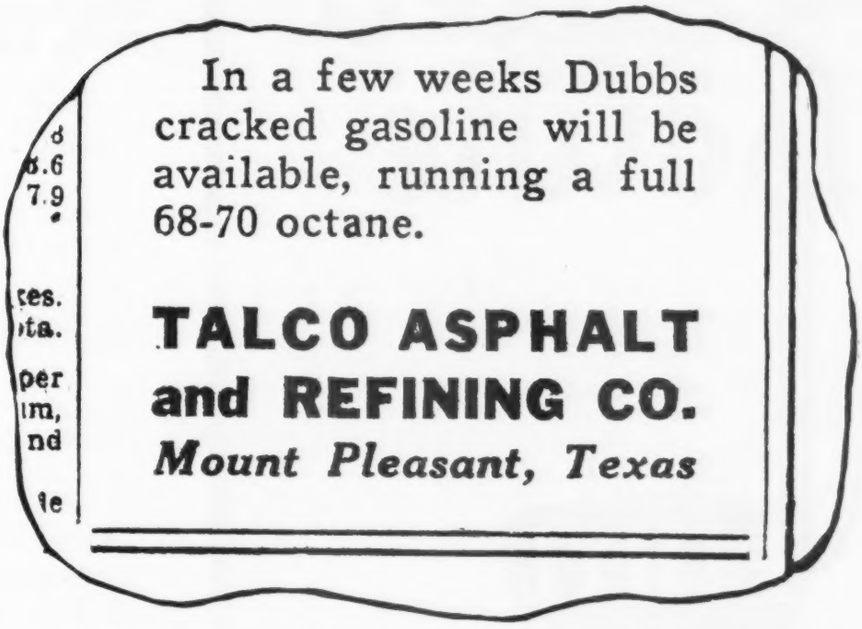
THE pumps, engines and machinery are housed in one large concrete brick building. The control house, condenser boxes, and some of the accumulators are located on the roof of this building. Pumps are mainly of the positive displacement type.

In connection with the expansion program, auxiliary equipment was installed. A desalting unit, or perhaps more accurately four units since it consists of four vertical tanks through which crude is passed, has been added. This has a daily capacity for desalting and demulsifying 6000 to 8000 barrels of crude daily. The units are of the electrical type in which there is a potential of 30,000 volts across the electrodes. Current consumption is said to be low and the cost of operation therefore low. The units are standard equipment of the Petroleum Rectifying Co. which has been active in promoting this type of emulsion breakers or desalters. Over a dozen patents in the past two years have been issued which differ chiefly in the shape of the electrodes.

The salt content of the crude varies with the source and season of the year, according to Mr. Wendeln. In the desalting operation about 10 per cent water is added before subjecting the crude to electrical treatment and the temperature is raised to 180° or 190° F. Heat is applied by heat exchange with gas oil in the refining unit. The effect on both corrosion and deposition of salt in tubing has been satisfactory, Mr. Wendeln said.

Another attack on the corrosion and deposition problem is made with water treating equipment. The new combination unit takes water which has been used in the older

Talco tells 'em


In a few weeks Dubbs cracked gasoline will be available, running a full 68-70 octane.
TALCO ASPHALT and REFINING CO.
Mount Pleasant, Texas

That's news from the advertising columns

It's good news for jobbers who can get this gasoline but they'll probably have to hurry

There is never enough Dubbscracked gasoline to go round

Universal Oil Products Co
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Dubbs Cracking Process
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Specification Sealed Gasoline

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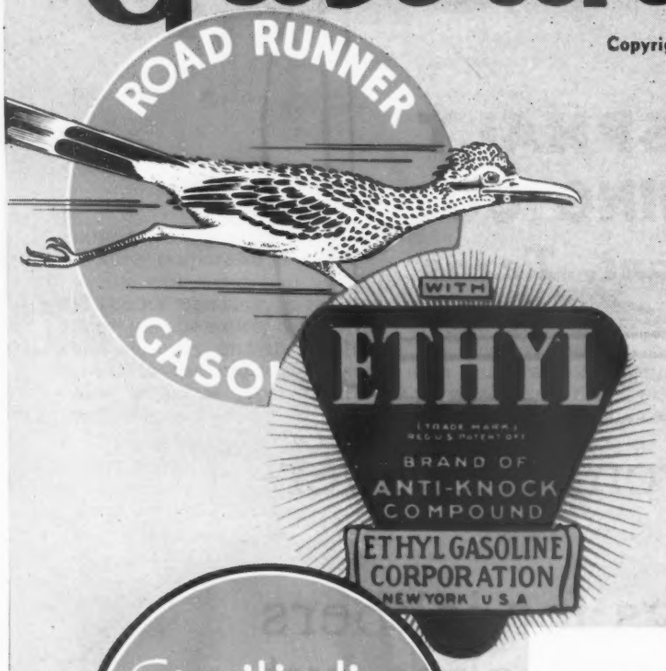

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Octane - Leaded

68-70
Octane - Unleaded

65 PLUS
Octane Gasoline

62 PLUS
Octane Gasoline

UNDER 62
Octane Gasoline

KEROSENES
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refining operations where no water treatment is used and cleans it up with a Permutit filtering system with acid and alum treatment. At present the water as used is a little on the acid side with a pH close to 6. The treating plant now has a capacity of about 280,000 gallons daily but delivers an average of 150,000 gallons daily. An increase in pumping capacity will boost the capacity up sufficiently to take care of the second combination unit. The new cooling tower, which is of latest design, may require additional capacity.

Another change was made to the company's continuous doctor sweetening plant to permit increased volumes to be handled without involving carry-over of the chemicals.

To facilitate increased functions in conjunction with the enlarged overall plant the laboratory and warehouse building were increased in size. Also there was an increase in the number of storage tanks in sizes up to 55,000 barrels. The second combination unit when completed will raise the plant's capacity to first place among Pure's refineries unless some of the older equipment is dismantled.

Desalting units are of the electrolytic type. Transformers are visible on top of each

Chemists To Discuss Combustion Of Gaseous Fuels . . .

Washington—Some idea of the importance of fuel properties and the application of chemistry and chemical engineering to fuel technology can be estimated from the number and scope of the papers to be given before the Division of Gas and Fuel Chemistry of the American Chemical Society at Rochester, N. Y., on Thursday and Friday, Sept. 9 and 10.

Twenty-seven papers, with the possibility of others, will be presented before these sessions, in which other divisions may likely participate. These papers, as shown in the program below, include discussions of the kinetics of ignition, flame propagation, inflammation limits, internal combustion engines, problems in fuel rating, and the state of the burned gas. In these papers the foremost fuel technologists of the country will present their data and views on these subjects.

SYMPOSIUM ON GASEOUS COMBUSTION AMERICAN CHEMICAL SOCIETY

Division of Gas and Fuel Chemistry

Morning Session, Thursday, Sept. 9

Introductory remarks: The Development of Combustion Research and the Present Outlook, Bernard Lewis, U. S. Bureau of Mines.

Kinetics of Ignition

Ignition Regions of Hydrocarbons, by D. T. A. Townsend, Imperial College of Science and Technology.

The Slow Combustion of Gaseous Paraffins, Especially Propane, by Robert N. Pease, Princeton University.

The Oxidation of Hydrocarbons at High Pressure, by D. M. Newitt, Imperial College of Science and Technology.

Mechanism of Combustion of Hydrocarbons, by G. von Elbe and Bernard Lewis, Carnegie Institute of Technology and U. S. Bureau of Mines, respectively.

Mechanism of Combustion of Hydrogen, by Louis S. Kassel, Universal Oil Products Co.

The Mechanism of Ignition by Electric Discharges, by G. I. Finch and B. W. Bradford, Imperial College of Science and Technology.

Afternoon Session, Thursday, Sept. 9

Chemical Action in the Glow Discharge; Reactions Preceding Ignition; by A. Keith Brewer, Bureau of Chemistry and Soils, U. S. Department of Agriculture.

The Ignition of Gases by a Local Source, by H. G. Landau, Carnegie Institute of Technology.

Flame Propagation

Theory of Flame Propagation, by Bernard Lewis, Bureau of Mines, and G. von Elbe, Carnegie Institute of Technology.

Problems in Flame Propagation, by H. F. Coward and W. Payman, Safety in Mines Res. Board.

The Measurement of Flame Speeds, by Ernest F. Flock and Charles F. Marvin, Jr., National Bureau of Standards.

Problems of Stationary Flames, by Francis A. Smith, Bureau of Standards.

Inflammation Limits

Inflammation Limits and Their Practical Application in Hazardous Industrial Operations, by G. W. Jones, U. S. Bureau of Mines.

Friday Morning Session

Internal Combustion Engines

Factors Affecting Rate of Pressure Rise in the Otto Cycle Engine, by G. G. Brown, University of Michigan.

Chemistry of Otto Cycle Engine Combustion, by Harold A. Beatty, Ethyl Gasoline Corporation.

The Combustion Process in the Diesel Engine, by G. D. Boerlage and J. J. Broeze, Royal Dutch Shell Laboratory.

Factors Controlling Diesel Engine Performance, by A. M. Rothrock and R. F. Selden, National Advisory Committee for Aeronautics.

Problems In Fuel Rating

Methods of Rating Diesel Fuels, by P. H. Schweitzer, Pennsylvania State College.

The Knock Rating of Motor Fuels, by Herbert W. Best, Yale University.

Molecular Structure of Hydrocarbons and Engine Knock, by Wheeler G. Lovell and John M. Campbell, General Motors Research Laboratories Section.

Friday Afternoon Session

The Production of Fuels of Given Rating, by Gustav Egloff, Universal Oil Products Co.

Economics of Fuel Ratings, by P. C. Keith, Jr., J. S. Carey, and J. T. Ward, M. W. Kellogg Co.

State of the Burned Gas

Comparison of Ideal and Actual Combustion Temperatures and Pressures: Anomalous Effects; gas Vibrations, by G. von Elbe and Bernard Lewis.

Experimental Studies of Flame Temperatures and Temperature Gradients in Flames, by H. H. Kaveler, Phillips Petroleum Co.

Flame Temperatures in Engines, by A. E. Hershey, University of Illinois.

A Mollier Diagram for the Internal Combustion Engine, by H. C. Hottel and J. E. Eberhardt, Massachusetts Institute of Technology.

Welding Symbols Evolved

NEW YORK—A set of standard welding symbols covering both fusion and resistance welding has been published by the American Welding Society. These ideographic symbols provide means of placing complete welding information on drawings in what amounts to a shorthand system.

Oil Industry of the Future

Glimpsed in Technologists' Report

WASHINGTON, Aug 7

AS A CHANGE of diet, and something to take your mind off the current price of gasoline, the following prescription in the form of some predictions and observations may serve to give you a new slant on this oil industry of ours. For example, do you know—

THAT the skilled use of lubricants is in its infancy;

THAT the United States is long on refineries, but short on refineries competent to utilize crude oil to the best advantage;

THAT no great increase in the use of petroleum substitutes is expected in this country in the next 10 years;

THAT chemistry is playing a rapidly growing part in the oil industry;

THAT the commercial use of trailers to display merchandise is barely in its infancy;

THAT the pipe line is the most successful economically of all the present forms of freight transportation.

These points, numbered among many brought out in connection with many industries, are contained in a report made to President Roosevelt by the Science Committee of the National Resources Committee. The National Resources Committee, set up during the present administration, is made up principally of the various Cabinet officers. Harold L. Ickes, Secretary of the Interior, is its chairman.

Its Science Committee is composed of nine members, three each designated respectively by the National Research Council, Social Science Research Council and National Council of Education.

The report is described as the first major attempt to show the trend in inventions in this country and how this trend may affect living and working conditions in this country in the next 10 to 25 years. Among other recommendations, the report suggests that a permanent organization be set up to study technological trends as an important factor in general social planning.

Identified as "Technological Trends and Their Social Implication", the 388-page report contains much that will interest the oil man. Touching on transportation, refining, production, fuels, lubricants, and chemistry, the oil industry appears to be well represented in the field of invention, according to indications reflected in the report.

It is pointed out that the time will come when we will "bemoan" the way in which our oil resources have been wasted. At the same time it is pointed out that the petroleum industry may safely count on great additions to its reserves through the discovery of unexploited pay sands in many of the fields that are now producing, both by deeper drilling and by intensive prospecting of strata already penetrated.

"The successes attained in petroleum offer hope that resources of other minerals may also be increased," the report states.

"Present developments indicate that we may look forward to a great deal of activity, not only in new fields but also in old, semi-depleted fields with necessary employment of capital and labor. There will also probably be an increase of the small industries furnishing special service to the oil and gas industry—consulting laboratories, well cementing companies, well surveying organizations, casing perforators, and others."

Mention is made in the report that there is encouragement in the fact that the most important refining developments are in the direction of conservation, with polymerization, cracking and solvent refining being singled out as examples of this trend.

The report states that "there is no apparent prospect of interruption of the trend toward intensive technologic attack on refinery problems with resultant improvement of products now in demand, development of new products, and conversion to higher use of more and more of the available raw material."

Although alcohol is recognized by the committee as a usable fuel in internal combustion engines, the report says that experience to date indicates that, if we had to rely exclusively on alcohol produced by methods now prevalent in European countries, the cost of motor fuel would be increased by 300 to 1000 per cent.

Hydrogenated coal and oil shale are given, along with alcohol, as the three possible sources of synthetic motor fuel by the authorities preparing the report. The hydrogenation of coal as a process of obtaining motor fuel and lubricants from this material, has actually made little progress and there are actually less than half a dozen such plants producing it on a commercial scale.

The report points out that the most intensive work along this line has been done in England and Germany, but with the yearly output of the two countries, however, hardly enough to satisfy the consumption of American automobiles for three days. It is further pointed out that each gallon of motor fuel produced from coal costs over three times as much as a gallon of imported motor fuel made from petroleum.

As for oil shale, the report states that "in the United States alone there is more potential motor fuel in oil shale than will ever be produced from the oil fields of this country." However, the committee does not anticipate that the production of shale oil will become an important industry in this country during the present generation, due to the high cost of its manufacture.

Polymerized gasoline will be heard

Place of Research

The oil industry particularly is described, in one finding of the report on Technological Trends of the Science Committee of the National Resources Committee, in which the place of research is briefly discussed.

"A large and increasing part of industrial development and of the correlated technological advances arises out of science and research," states the report.

"Invention is commonly an intermediate step between science and technological application, but this does not make less important the point that the basic ideas upon which these programs are developed come out of scientific discovery or creative activity.

"Advance of many aspects of industry and the correlated technologies is dependent upon scientific research and discovery. This fact is made clear by the increasing importance of research laboratories in the great industries. The research conducted is not only well organized but it is carried forward with the co-operation of investigators having high rank in the field of science.

"If the contribution of research were to be reduced, the industries would tend to freeze in a particular pattern."

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from a great deal more in the future, according to the committee. "It is gradually becoming recognized that the huge waste of natural gas in the oil fields must stop if for no other reason than because in addition to fuel value it is the source of many chemicals," its report states.

Of solvent refining, the report states, "In lubricants the success in refining by solvent and similar methods, in producing an oil as pure as possible, has opened up some new problems, including the question of whether these oils do not naturally contain a corrosion inhibitor, a part of which should be in the final product. With the petroleum industry tending so definitely in the direction of chemical manufacture, we may expect simpler mixtures in efficient lubricants as well as in fuels."

THE report makes special mention of a new type of oil in which great film strength is obtained by mixing one per cent of one of the compounds of phosphorus in 99 per cent petroleum oil. Stock cars using this oil in a test, showed less wear after using it for 100,000 miles than normally occurs in 10,000 miles of service, according to the report.

Mention is made of the growing utilization of petroleum as a raw material in the manufacture of important chemicals. Alcohol, acetone, amyl alcohol, acetylene, and ethylene glycol are mentioned as some of the chemical derivatives. In addition it is reported that a synthetic plastic is now prepared from petroleum residues.

The pipe line, referred to in the report as "the least conspicuous, the most efficient (within its limits), and the most successful economically of all present forms of freight transportation," is said to have been mentioned as a possible transportation medium for other commodities.

Grain and coal can be moved in this manner by means of compressed air, but the cost of the air and the probability that any dry commodity would be reduced to a powder in an extended journey through a pipe, in addition to the difficulties in keeping the pipe line clean, "lends small encouragement to prospects of this form of transportation," the report states.

"Hydrogenation of coal probably offers a better prospect as the resultant liquid could be piped like any other fluid. It is also possible that coal may be reduced to a gaseous mixture and piped while in this state. Considering, however, the low value of coal, the remarkable efficiency with which it is transported by railroads, waterways, and even on short hauls by motor trucks, considering also the growth of natural gas pipe lines, and particularly surveying the transmission of electrical energy, it seems unlikely that piping of hydrogenated coal will be an important item in the next two decades of transportation."

Regarding diesel operation, the committee admits that on trucks and buses this type of power has possibilities, owing to the larger use of fuel in relation to the relatively fixed cost of a diesel fuel injection system.

As for diesel-powered automobiles, however, the report is not so optimistic. The cost of fuel, the report states, is rather a small part of the cost of owning and operating an automobile, "and it seems doubtful if enough operating expense can be saved using a diesel engine in a motor car to pay for the increased cost of a diesel fuel injection system—which might easily amount to over $200 or $300 per car."

It is pointed out that the use of alcohol, or gasoline-alcohol blends, would not present any serious technical problem to the automobile industry. The report states that, while the economic problem of increased prices for fuel might become important, and while alcohol undoubtedly has less heat energy and causes far more corrosion than gasoline, engines can be built to run on it.

"The real uncertainty as to fuels—an intangible possibility which may genuinely revolutionize the internal-combustion engine—lies in the research laboratories, particularly those of the chemical and the oil companies. If coal or crude petroleum is some day reduced entirely to gases, and these gases in turn are polymerized and converted to liquid fuel with resultant changes in the molecular structure, builders of internal combustion engines will encounter a good many new problems. Fortunately, the present knowledge of fuels for internal-combustion engines, the knowledge of the engines themselves, and above all present methods of studying fuel, are so advanced that it will not take the automobile industry long to build engines to use any liquid hydrocarbon fuel such as would be at all possible to use in internal-combustion engines."

The committee points out that this situation is only a possibility, but one of such wide implications outside the motor industry as to deserve special mention.

In touching upon the new problem of the road—the travel trailer—the committee does not attempt to put it under the head of housing or transportation, but merely states it "undoubtedly answers a great many demands both for mobile residences not affixed to real estate, and for cheaper and more comfortable travel."

THE report states that the commercial use of trailers for the display of merchandise is barely in its infancy, that quite probably this use will increase steadily, and that it is a feature which may even touch the operation of large department stores and mail-order houses.

The committee sees the trailer industry closely allied with the automobile industry, not necessarily meaning that automobile companies will build the trailers, but that distribution of this type of equipment through the automobile retail channels seems logical.

It is pointed out in the report that, since the trailer is not suited for crowded streets, camp grounds and filling stations must enlarge their functions.

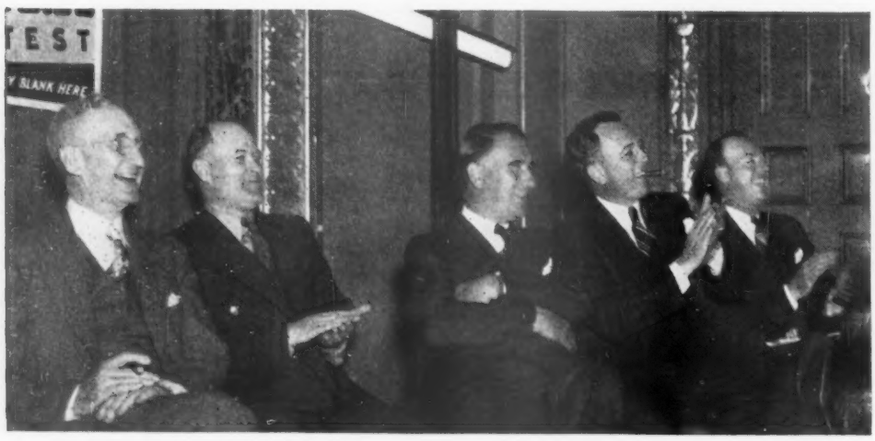
Any increase in the use of the trailer for a permanent household residence may even encourage the trend to smaller families, according to the committee.

New government problems are seen for the trailer relating to taxation, car registration, police and sanitary regulations, and establishment of a place of residence for voting. There is also seen a possibility of more interstate uniformity of laws affecting travelers.

"The trailer, when mass production leads to cheaper prices, is likely to supplement rather than replace the stationary home," concludes the committee.

This report of the National Resources Committee, of which Harold L. Ickes, Secretary of the Interior, is chairman, indicates some of the problems which the adoption and use of the most important new inventions will present. It emphasizes the importance of national efforts to bring about prompt adjustment to these changing situations, and points out some of the lines of national policy directed to this end.

The National Resources Committee was assisted in preparing the report by the Science Committee, including members designated by the National Academy of Sciences, the Social Science Research Council, and the American Council on Education. William F. Ogburn was director of research for the report.



A good story! Executives of the Mid-Continent Petroleum Corp. relaxed at a sales division meeting in Tulsa. Left to right: J. G. Denton, vice president and general counsel; D. Glenn Morgan refinery superintendent; Jacob France, president; R. W. McDowell, vice-president in charge of sales; T. B. Fitzgerald, assistant sales manager

NEW

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Estimating Gasoline Demand

U. S. Bureau of Mines Has Been Doing It for Four Years, with Good Batting Average Despite Many Variable Factors

WASHINGTON

FOUR years ago the Bureau of Mines began its monthly predictions which undertook not only to forecast how much gasoline the American motorist would consume "next month," but to translate this demand at the service station pump into the number of barrels of crude which must come from wells in each oil-producing state to satisfy it.

A fair "batting average" has been maintained over the four-year period, comparing forecasts with actual demand, but the current season of record-breaking gasoline consumption has the economists and statisticians who compile the forecast checking, double checking and re-checking their figures—and there are millions of them.

In some monthly forecasts they have missed the bullseye by what their Georgia friends would describe as a "pretty fuh piece," but over the longer periods, the forecasts have levelled off pretty close to actual demand.

In May this year, for instance, the Bureau predicted a demand of 47,650,000 barrels, but the anticipated big increase didn't show up as quickly as they expected it, and actual demand was 45,484,000 barrels.

For the first five months of 1937, however, the actual demand—195,100,000 barrels—was only 300,000 barrels in excess of the forecast demand.

But there are many factors which enter into the demand which can't be foreseen—speculative buying, buying in anticipation of a tax increase, or holding off buying in the remote prospect of a tax decrease. This latter may have an effect on the June demand figures; for a while, late in June, it loked as if the federal tax on gasoline might possibly lapse for a few days, as the bill extending it appeared to have brought up short behind the log-jam of legislation caused by the judiciary bill harrangue in Congress.

It is possible that buyers of gasoline from refineries may have held off from buying late in June, awaiting the possibility that the tax would be "off," even for a few days, during which they could step in and buy, tax free, supplies for several months. The bill beat the deadline, however, and the taxes didn't lapse. Only when the figures for actual demand in June come out will one be able to tell whether this possibility had any effect.

When the layman (the non-statistician, that is) looks over the mass of figures,

By G. T. KELLOGG
N. P. N. Staff Writer

• • •

graphs, charts, curves, and other data that the forecasters pour into their cranial hoppers, mix well, and release as a prediction on motor fuel demand, one wonders that they come anywhere near as close as they do.

First factor used in making the forecast is the number of motor vehicles in use—not today, but next month. To arrive at this figure, automobile registrations as of Jan. 1 are used as the base, to these are added new car purchases as nearly up to the date of the forecast as available, and from this total are subtracted the number of cars junked.

Since the only figures available for junking of cars are, at best, several months old when the forecast is made,

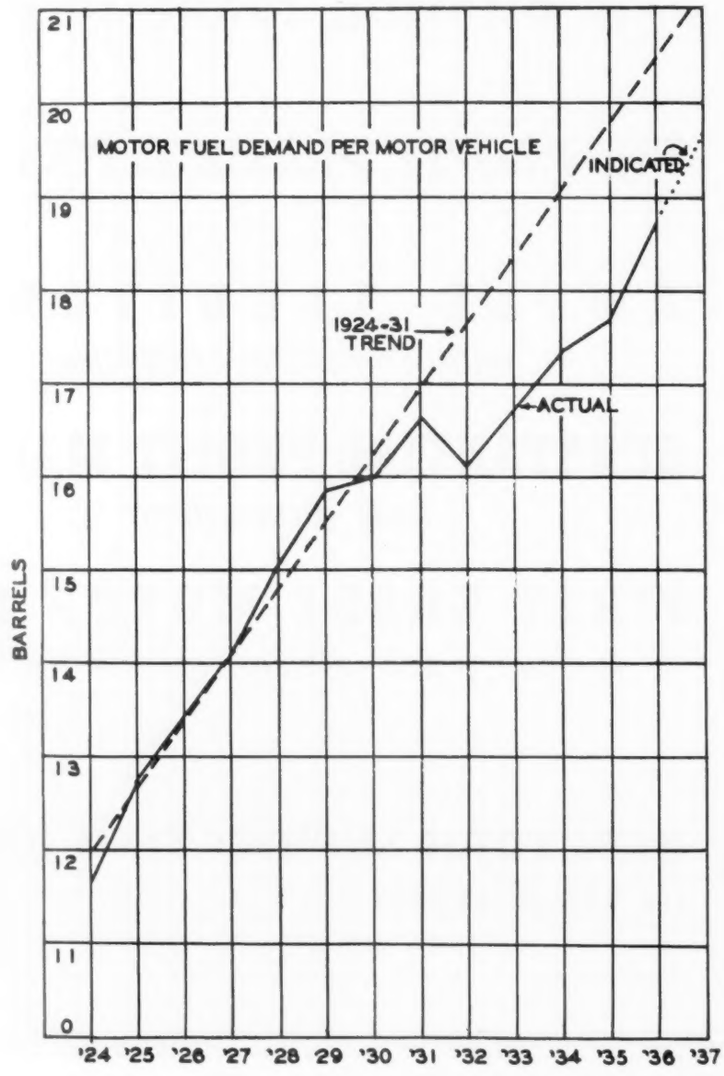
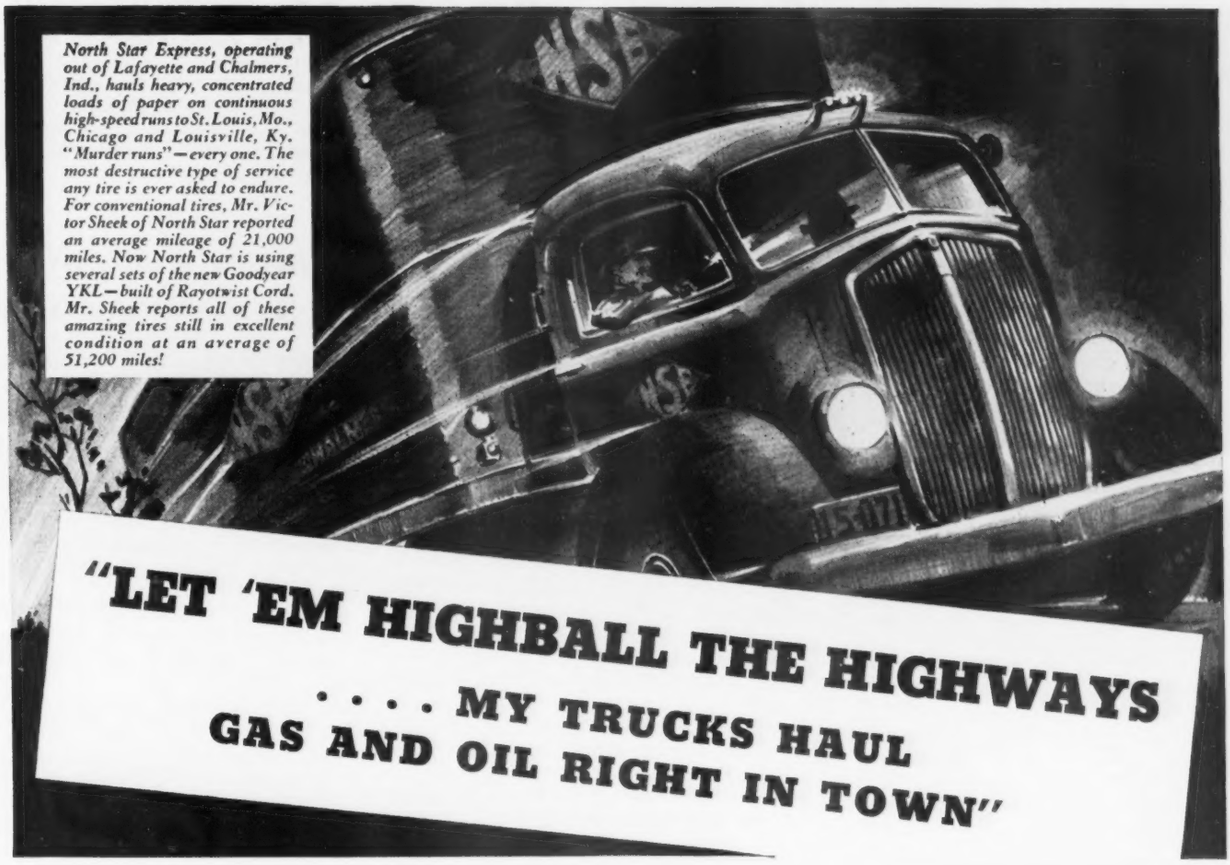


Chart prepared by the U. S. Bureau of Mines, showing the motor fuel demand per motor vehicle and the "straight line trend" of fuel consumption. The curves are used in the process of estimating gasoline demand



North Star Express, operating out of Lafayette and Chalmers, Ind., hauls heavy, concentrated loads of paper on continuous high-speed runs to St. Louis, Mo., Chicago and Louisville, Ky. "Murder runs"—every one. The most destructive type of service any tire is ever asked to endure. For conventional tires, Mr. Victor Sheek of North Star reported an average mileage of 21,000 miles. Now North Star is using several sets of the new Goodyear YKL—built of Rayotwist Cord. Mr. Sheek reports all of these amazing tires still in excellent condition at an average of 51,200 miles!

"LET 'EM HIGHBALL THE HIGHWAYS . . . . MY TRUCKS HAUL GAS AND OIL RIGHT IN TOWN"

SURE, most truck operators can say the same thing:

"'Murder runs' are out of my line."

Nevertheless, the success of Goodyear Tires on "murder runs" is important to every truck owner regardless of what his truck does.

The same engineers who developed the famous Goodyear YKL Tire—that is saving users hundreds of thousands of dollars in long-distance service at sustained high speeds—have also developed many other notable, money-saving tires.

Each is geared to one specific type of work—a stand-out tire in its field.

For your trucks, there's the Goodyear All-Weather Balloon—a tire just as scientifically suited to them and their work as the YKL is to "murder runs"—a tire that will give you more in long, low-cost, trouble-free service than any tire built.

It has the *All-Weather Tread* for greater traction and non-skid; *Supertwist Cord* for longer, tougher service—blowout protection *in every ply*—and many other tire-saving, money-saving features.

With a super-tire for you—for the "murder runs"—for every other trucking requirement—it's no wonder users everywhere say—

Put Goodyears—the right Goodyears—on ANY job and watch your mileage jump!

CAUTION! The new YKL Goodyear is recommended only for the most destructive types of service—for the "murder runs" over long distances at sustained high speeds. In ordinary trucking, its extraordinary capacities cannot be fully utilized—and, frankly, its higher price cannot be justified.

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THIS TIRE is not for the "murder runs" but a tire which, in ordinary service, will give you more of everything you demand in a tire than any other make costing anywhere near its price. It's Goodyear's answer to the menace of rising costs.

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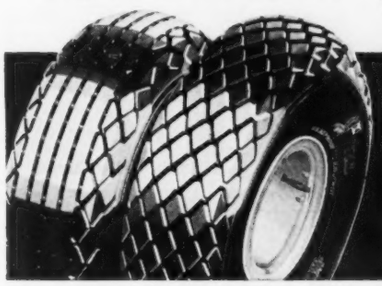
It may be just the tire you've been looking for. See and examine this new R-1 today.



THERE'S A REAL KICK IN A GOODYEAR BATTERY

GOODYEAR TRUCK TIRES

P. S.—GOODYEAR BATTERIES, RIMS, FAN BELTS AND RADIATOR HOSE ARE MONEY-SAVERS, TOO!

the "trend" is noted, and the figures projected into "next month."

Similarly, a trend is projected on new car purchases, and a figure determined upon for next month. Both these figures must be adjusted for general business conditions and other outside influences.

Recently the Bureau has found a new seasonal element to take into consideration in estimating motor vehicles in use. It finds that the spread between automobiles in use on July 1 and those in use on January 1 is increasing. In its forecast for July the Bureau pointed out that the "estimated number of motor vehicles in use on July 1, 1935, exceeded those in use on Jan. 1, 1935, by 5 per cent; this difference in 1936 was 5.3 per cent, and in 1937 will be 5.9 per cent."

Prosperity Credited

Returning prosperity is given credit for this increasing spread, which, according to the Bureau, was even greater before the depression. During the depressed years many attempts were made to show that the curve delineating this seasonal variation was "flattening out" because of road and automobile improvements, resulting in more winter driving.

The Bureau feels, however, that summer driving was curtailed during the early 30's due to economic factors, and that it is now getting back into its "stride."

After taking all these elements into consideration, the Bureau forecast that 26,775,000 cars would be in use during the month of August this year—and its next job was estimating the amount of fuel each probably would use.

This part of the forecast is even more in the realm of "projection," for into its calculation must be tossed even more of the "X's" which mark unknown quantities.

A "straight line trend" which has been built up over a number of years is the first element in this determination. During the depression years a "hollow" was developed, where actual demand per motor vehicle slumped below the "straight line," but now it is curving its way back to the sharply pitched trend marker.

Here the index of business conditions is used to "adjust" the demand as indicated by the "trend" to current conditions. The index used is the Federal Reserve Board's index of volume of trade, and, by an elaborate scheme of decimals, a conversion factor is developed from this to apply to the demand as indicated by the straight line.

But this is only the start. The "seasonal" demand enters the picture at this point, and long rows of steep, sharp, mountainous peaks, with deep ravines in between, marking the ups and downs of demand per car, summer and winter, for several years past, are carefully perused in arriving at a projection of each car's probable consumption next month.

Another arm-length decimal conversion factor is developed by which this seasonal trend is applied to the probable demand per car as already determined by the "straight line" trend adjusted by the index of business.

For August, the Bureau forecast that the 26,775,000 cars in use would require 52,480,000 barrels of fuel, or 1,692,860 barrels daily.

After the forecasters get over this "hump" the road to a forecast is comparatively smooth traveling.

To the figure for estimated fuel requirements, then, is added the Bureau's estimate of natural gasoline losses, benzol, direct sales, and other small factors which will increase demand above gasoline consumed by the cars in use, and the figure thus obtained—it was 52,600,000 for August this year—is forecast as the total domestic demand for motor fuel.

To this are added the Bureau's estimates of probable exports of motor fuel —also based on trend figures, adjusted by seasonal and other factors—and the forecast of total motor fuel demand is arrived at.

More "Projection"

At this point, the economists take a look at stocks of "finished and unfinished gasoline" at refineries, and again project the amount on hand as of the first of the month for which they are forecasting.

Then again referring to past performances, the Bureau "estimates"—although any intimation of "recommendation" is throttled—how much gasoline will be taken from stocks during the coming month.

This gets them down to what will actually have to be produced during the coming month to meet the demand. For August this figure was set at 49,400,000 barrels.

After the forecast of gasoline production necessary to fill the demand, the Bureau undertakes to predict what refinery districts the gasoline will come from. To do this, it again studies "trends" —what districts have been supplying what percentages of the total demand in the past; what changes in supplying districts have been caused by seasonal variations in production and demand, and similar unknown, but not un-conjectured, elements.

When each district has been "assigned" its share of gasoline production for the coming month, the next move is to determine how much crude will be needed for this gasoline, and where it will come from.

Percentages of yield of the various types of crude and at the different seasons of the year—depending on demand for gasoline and other refined products, as well as refining methods used and gasoline-content of the crudes—are estimated by the Bureau before this can be predicted.

Applied to Crude

The percentages of yield are applied to the crude to be refined in each of the 11 refining districts—movement of crude to refineries also being estimated by the Bureau by means of figures covering several years past. For instance, one district will be forecast to produce so many thousands of barrels of gasoline. The figures of "past performance" indicate to the Bureau that refiners in this district will use crude from a given field—or fields—in its operations. The percentage of yield will be applied to this type —or types—of crude, and it will be seen how much crude will be needed to produce the requisite number of barrels of gasoline.

When this procedure is applied to all refining districts, the total crude oil demand of all 11 is "broken up" by sources of supply—that is, by states.

How these state forecasts of crude demand are used by the states in fixing their "allowables" is a matter which the states themselves determine; they are merely published by the Bureau as its forecast of what the demand for crude oil from each producing state will be "next month," it is pointed out.

But, with all the variable factors which go into the making of a forecast, there is little wonder that demand sometimes exceeds, or fails to attain, the Bureau's prediction.

World's Highways Cover Ten Million Miles

NEW YORK, Aug. 7.—Highways serving the world's motor transportation needs have increased 51 per cent in the last eight years, and now total more than 9,900,000 miles. This information, together with other facts concerning significant phases in highway development are described in "World Highway Progress," a comprehensive report issued by the Highways Committee of the Automobile Manufacturers Assn.

Following are some of the highway developments described in the report:

Germany is rapidly completing its Autobahn system consisting of 5000 miles of the most modern express highways to be found anywhere in the world.

Trans-European Highway project gives new expression to international co-operation among countries of Europe.

8000-mile "All Red Route" from Cape to Cairo now enables motorists to penetrate "darkest Africa". Africa is also spanned east and west by road from Gibralter to Cairo.

The most modern sleeping bus equipment to be found anywhere in the world is in regular service across the deserts between Damascus and Baghdad.

Argentina this year is completing 22,237 miles of roads, 300,000 culverts and 231 bridges.

Ancient fortifications of Paris being utilized to modernize traffic facilities and expedite flow of traffic into and out of the city. Motor transportation being co-ordinated on large scale with nation's other transport agencies.

Threat of famines in China being diminished as roads penetrating the interior are completed.

Progress being made on road from U. S. to Panama assures its completion within a few years. Only a few short gaps remain to be completed in South American section of Pan American Highway.

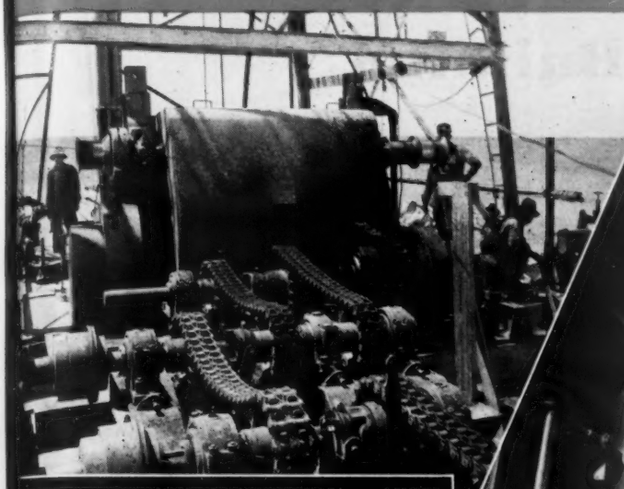
The Highways Committee, in its report, predicts that "the next decade is destined to mark an advance in this form of communication (highway facilities) surpassing anything which has ever occurred before".

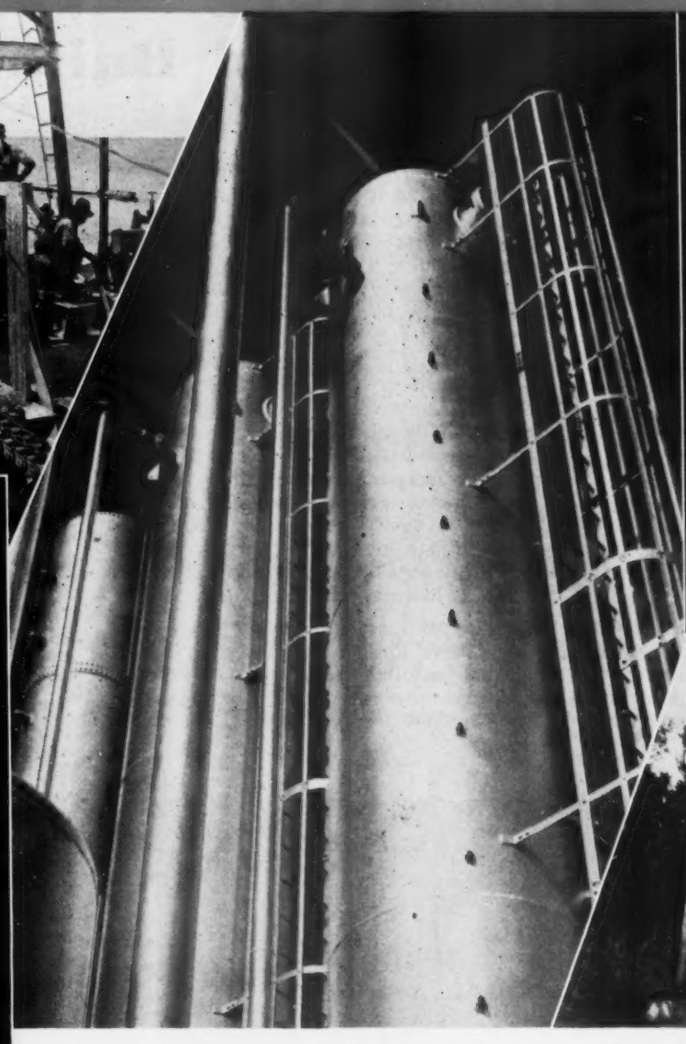
Dividend Declared

CHICAGO, Aug. 6.—A 25-cent extra and 25-cent regular dividend is declared by the Standard Oil Co. of Indiana directors, announced, payable Sept. 15, to stockholders of record on Aug. 16.

Last previous dividend was 15 cents extra and 25 cents regular paid June 15. The same dividends were paid on the previous quarter, March 15.

Attend the World's First, Oldest, Greatest Oil Show





TULSA
OKLA. U. S. A.
MAY 14-21
1938

See the latest Equipment and Methods in . . .
DRILLING
PRODUCING
PIPE LINE
REFINING
EXPLORATION
and
SCIENTIFIC
DIVISIONS
of the
Petroleum
Industry

The next International Petroleum Exposition will be held in Tulsa, Okla., U.S.A., May 14-21, 1938. Founded in 1923, this is the original oil show and the greatest exposition in the world devoted to a single industry.

The latest equipment, methods and improvements which science, engineering and practical experience have developed in the petroleum industry in recent years, will be displayed, demonstrated and discussed. From aerial photography, seismograph and core drill, to portable rotary drilling equipment, modern pumping units; the latest refining methods and pipe line equipment will be here for your inspection. Plan now to attend the Tulsa oil show and visit adjacent production, refining and pipe line and scientific operations.

For complete information, write,

WM. B. WAY, General Manager
INTERNATIONAL PETROLEUM EXPOSITION
Tulsa, Oklahoma

INTERNATIONAL PETROLEUM EXPOSITION

ORIGINAL *"World's Fair of the Oil Industry"*

Michigan Adopts Pay-As-You-Go System for Road Building

LANSING, Mich. SENATE Enrolled Act No. 43, enacted in the recent session of the Michigan legislature, declares:

"Sec. 1. There is hereby appropriated from the general fund from moneys not otherwise appropriated the sum of five million dollars for the fiscal year ending June 30, 1938, and each fiscal year thereafter, for the construction, maintenance and improvement of highways. Such appropriations shall be disbursed as provided by the laws of this state.

"This act is ordered to take immediate effect."

Now, this act is quite out of the ordinary. It is the first direct appropriation made by a state for highway purposes since the gasoline tax came into popularity. There have been bond issues in practically every state to finance roads and there have been other forms of borrowing, but no pay-as-you-go through appropriation of general revenues.

This act, as it clearly states, is a continuing appropriation. It is still more remarkable in that it was passed in a session which saw the usual effort by special blocs to decrease available highway revenues by diverting gasoline taxes.

The story of how this was brought about gets tangled up immediately with Murray D. Van Wagoner, state highway commissioner, who a month ago was inaugurated for his second four-year term. The office is an elective one and the highway commissioner, responsible only to the electorate and with no fellow commissioners to pacify and trade with, as is the case in some other states, is able to devote himself strictly to the construction and maintenance of roads.

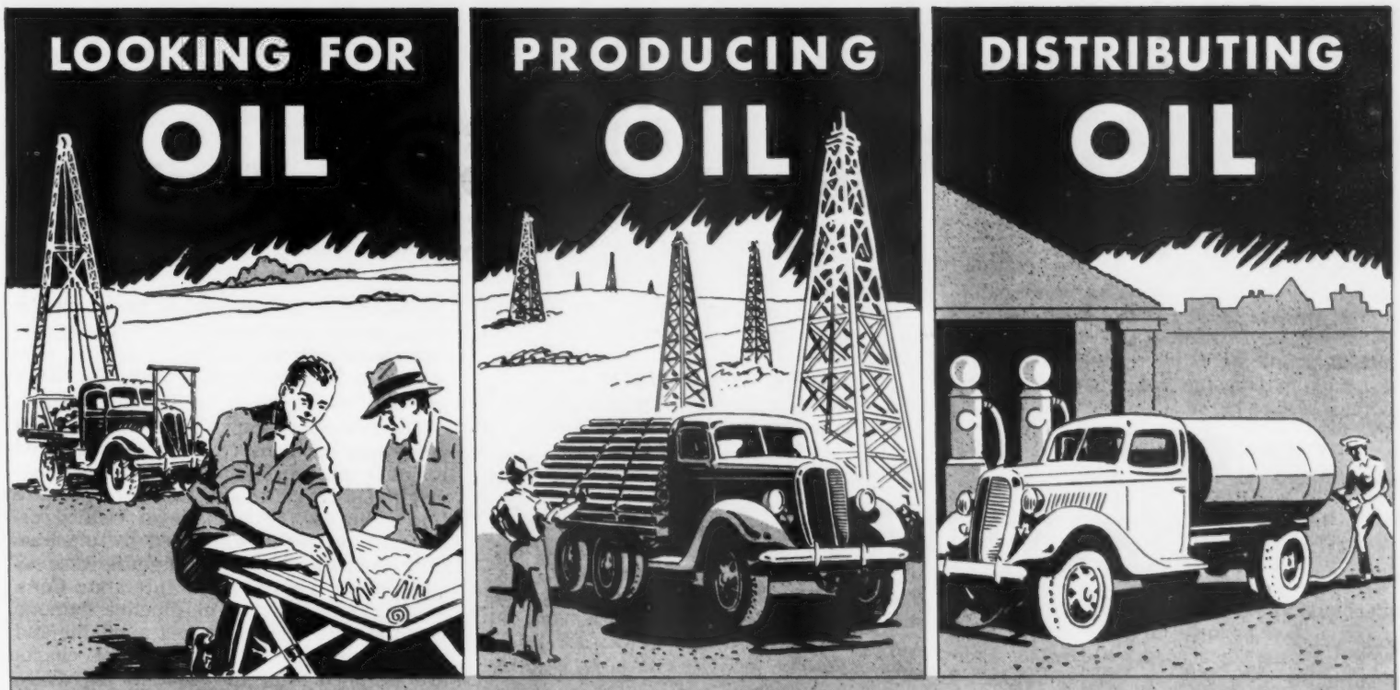
While oil men in Michigan, as elsewhere, have long been interested in seeing that gasoline taxes were spent only on roads, they assert that Commissioner Van Wagoner deserves most of the credit for the successful resistance to the raids that are ever being planned on the gasoline tax revenues. His is no case of special pleading. He represents all the people of the state and he can demonstrate that highway construction plays an important part in the state's economy. The tourist crop in Michigan is a large one and it grows each year, bringing in an amount that cannot be readily calculated but which must add up to millions of dollars. The more good roads, the more tourists. Michigan has the proper summer climate and the scenery and all that remains is to make the resort spots accessible.

Murray D. Van Wagoner, Michigan state highway commissioner. Just re-elected for his second four-year term, he has had much to do with the practical nature of this state's highway program.

The appropriation of $5,000,000 annually from the general revenue fund sprang from two considerations. One was that the motorist of Michigan pays in each year a lot of money besides his gasoline tax. The sales tax gets him on the purchase of a car and parts and he pays a license tax. The other reason — and it is the weightier — is that gasoline tax money is constantly being diverted from the localities where the revenue is large to those areas where it amounts to but little. Construction and maintenance of highways proceed in the sparsely settled counties of Michigan's upper peninsula. The snow plows will be run on some 10-mile stretch of road so that Joe Doakes and family can get in to the store, at a cost comparable to that of clearing a main highway in a big industrial region.

Thus, the continuing appropriation bill is a move toward recognizing the inequities that exist in highway expenditures. Right now, in connection with WPA, the Michigan highway department is making actual count of the traffic, using some 40,000 count stations as rapidly as they can get to it. From the information thus gained, it is the commissioner's hope to arrive at a more equitable allocation of funds over the state.

This man Van Wagoner seems to be a stand-out among highway commissioners of the U. S. He holds important chairmanships in several engineering and road building associations and among these is the chairmanship of the gas tax diversion committee of the American Road Builders Assn. He holds some strong opinions on the subject. He let fly with some vigorous language early this year in his address to the association named, at its New Orleans convention. He asserted that the motor vehicle taxpayers of America "have been deprived of more than a billion dollars of rightful benefits," through diversion. The 1936 misuse of motor vehicle taxes, in-



AND THEY'RE *all* USING MARMON-HERRINGTON ALL-WHEEL-DRIVE TRUCKS

DOWN in the oil country you'll find Marmon-Herrington all-wheel-drives giving faster, more dependable results in difficult geophysical work.

In the producing fields themselves, you'll find more Marmon-Herringtons doing the tough jobs—jobs that can't be assigned to ordinary hauling equipment.

Still more Marmon-Herringtons are used in the distribution of petroleum products because they will give greater ton-mile efficiency and greater economy.

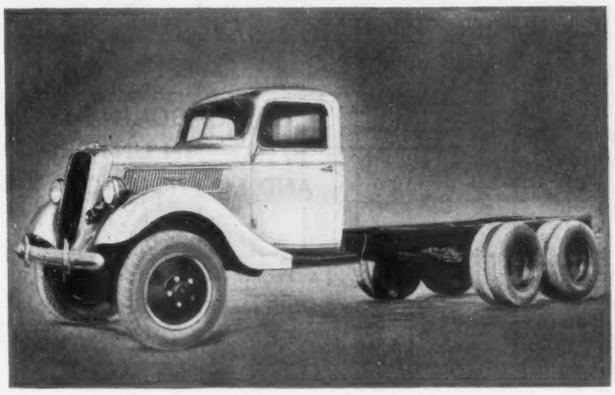
Every branch of the oil industry, in fact, has found that the extra all-wheel-drive traction, power and safety offered by Marmon-Herrington is the answer to many a vexing transportation problem. These important advantages are available today at remarkably reasonable costs as a result of the introduction of the Marmon-Herrington all-wheel-drive Ford V-8 which makes it possible to buy TWO genuine all-wheel-drives for the price most buyers would expect to pay for only ONE.

Write today for complete descriptive Marmon-Herrington literature and specifications. You'll find how Marmon-Herrington can help you do a better hauling job in less time at a much lower cost.

The Marmon-Herrington All-Wheel-Drive Ford V-8—Offered on passenger, commercial car, light delivery and truck chassis. Both four- and six-wheel-drive.

Completely engineered and built in Marmon-Herrington factory insofar as every all-wheel-drive feature is concerned. The lowest price of any all-wheel-drive truck on the market.

●



The Marmon-Herrington Standard All-Wheel-Drive Line—More than 30 models ranging in capacities from 1½ tons to 20 tons. Both four- and six-wheel-drive. Used throughout the world by the oil industry. Outstanding for all heavy duty work with performance unsurpassed in any all-wheel-drive vehicle ever produced.

●

MARMON-HERRINGTON COMPANY, Inc., Factory and General Offices: Indianapolis, Ind.

World's Leading All-Wheel-Drive Engineers and Builders

cluding gasoline taxes, he estimated at $150,000,000.

". . . the habit of using motor vehicle taxes for other than highway purposes is contrary to a fundamental principle of taxation in America," he said. "That principle says that the benefits from taxes levied against a distinct group of society should accrue to the group paying the tax.

"Diversion, therefore, becomes not only unethical but unfair. We are robbing the motor vehicle taxpayer, no matter what polite language we may use. In my opinion, it is nothing more than a cheat and a fraud against the most patient of all taxpayers.

". . . Most people, in thinking of the problem, are too often inclined to consider diversion only as a barrier against new construction. While this in itself would be sufficient to make it Public Enemy No. 1 of all the friends of good roads, let us not underestimate the tremendous toll that it has exacted on the maintenance of our highways. All over America today, we road builders see the results of this evil in the out-moded, worn-out and unsafe condition of our public highways.

THE element of public safety presents an important, if not the most important aspect of this whole diversion evil. In nearly every state in the Union of high motor vehicle registration the automobile accident rate is a public scandal. Yet diversion continues merrily apace while scores of people are being killed every day at bad curves, at unprotected railroad crossings and intersections, and by all the other physical hazards that we road builders know should be eliminated and are eager to eliminate if we are given the opportunity."

Commissioner Van Wagoner has four years more, by decision of the people, to put his ideas into play. He fights off diversion with one hand and strives for more logical use of revenues with the other and all the while he builds roads. The state and federal trunk highways in Michigan now total more than 9,000 miles, of which 3,500 miles are gravel and 5,500 hard surfaced. All construction of paved roads is now 20-foot minimum width and much is being done in building multiple-lane highways. The state now has 587 miles of more than two-lane roads and of this total 348 miles are of the four-lane variety.

Maybe one reason for the commissioner's forward-looking policies is that he came into his office on the basis of achievement and not merely by reason of political diligence. He is 39 years old and he has been building roads since he left school in 1921. He was graduated that year from the University of Michigan as a civil engineer and his first job thereafter was in the bridge division of the highway department. He opened a private engineering office in Pontiac in 1924 and continued it until 1930 when he was elected Oakland county drain commissioner, and was re-elected in 1932. In the spring of 1933 he was elected state highway commissioner.

30% of Nation's Gasoline Supply Moves By Long Distance Trucking

CHICAGO, July 26.—Railroads, in this country, by their own calculations, lost $62,713,475 to trucks in revenue from hauling gasoline in the U. S. in 1936, according to a statement of the Western Assn. of Railway Executives.

The estimated revenue from the movement of gasoline in 1936 by the three methods of transportation is given as follows by the railway association: Railroads, $171,932,165; long distance trucking, $62,713,475; gasoline pipelines, $27,924,544. The tonnage of gasoline estimated to have been moved by truck in 1936 in the United States was 13,545,027 tons.

The accompanying chart, which shows the comparison of railway, pipeline, and truck gasoline shipments for the period 1931-1936, indicates a consistent increase in the use of trucks for hauling gasoline during that time.

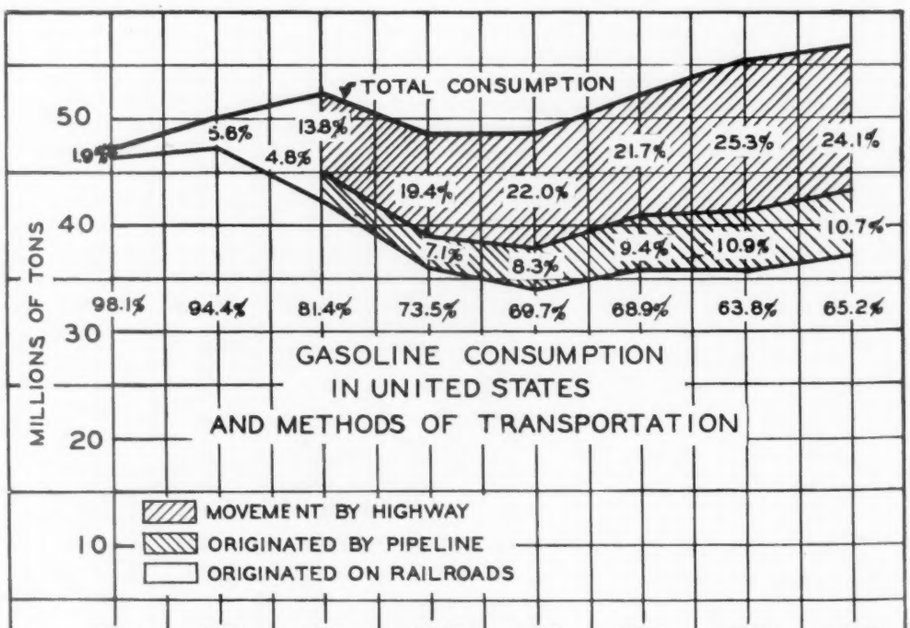
In 1931 it is shown that 13.8 per cent of the gasoline was transported by truck and 81.4 per cent by rail, while in 1936 trucks hauled 24.1 per cent of the gasoline consumed in the U. S. and the railroads transported 65.2 per cent.

In preparing the chart, highway and pipeline revenues were calculated at the same amount per ton as received by the railroads, or $4.63. The upper line on the chart shows the estimated total gasoline consumption in tons and is based on the total gallons consumed as reported by the American Petroleum Institute, and converted to tons on the basis of 6.3 pounds per gallon.

The lower line shows the tons of refined petroleum products (exclusive of fuel and residual oil, lubricating oils and greases) originated on railroads. The intermediate line indicates the tonnage of refined petroleum products originated by pipeline. Both the rail and pipeline figures were secured from reports of the Interstate Commerce Commission. The pipeline tonnage originated in 1936 is not yet available and the figures used in making the charts are assumed to be the same as in 1935.

Plans Radio Program

ALTUS, Okla., Aug. 7.—About 150 jobbers handling products of Bell Oil & Gas Co. met here Aug. 4 to hear about Bell's new advertising campaign. It will consist of a 15-minute radio program twice weekly built especially to interest boys. The program is of the story type telling of the adventures of Stray Hollister. Stations at Wichita Falls, Texas, and Elk City and Oklahoma City, Okla., will carry the program. Bell operates a refinery at Grandfield, Okla.



Growing proportion of country's gasoline is moved by long distance trucking. The chart, prepared by the Western Assn. of Railway Executives, compares the rail movement, the pipeline movement and the long distance trucking of the gasoline consumed in the U. S. by years since 1929

New Patents

Compiled by R. E. Burnham, patent and trademark attorney, 511 Eleventh Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 25c each. State number of patent and name of inventor when ordering.

June 8, 1937

REFINING

Process for removing dispersed residual blackstrap—Arthur E. Birch, Lansdowne, Pa., assignor to Atlantic Refining Co. Filed Aug. 2, 1934. No. 2,082,787.

Production of high octane gasoline—Eugene J. Houdry, Woodbury, N. J., assignor to Houdry Process Corp. Filed Sept. 16, 1932. No. 2,082,801.

Art of cracking hydrocarbons—Edward W. Isom, Scarsdale, N. Y., assignor to Sinclair Refining Co. Filed Sept. 10, 1932. No. 2,083,120.

Process for treatment of lubricants—Warren G. Black, Cleveland, Ohio. Filed June 22, 1935. No. 2,083,139.

Treatment of motor fuel—Charles D. Lowry, Jr., and Charles G. Dryer, Chicago, Ill., assignors to Universal Oil Products Co. Filed Aug. 8, 1936. No. 2,083,197.

Treatment of hydrocarbon oils—Joseph G. Alther, Chicago, Ill., assignor to Universal Oil Products Co. Filed Feb. 16, 1931. No. 2,083,212.

Process for breaking petroleum—Melvin De Groote, St. Louis, and Bernhard Keiser, Webster Groves, Mo., assignors to Tretolite Co. Filed Aug. 21, 1936.

Process for breaking petroleum emulsions—Melvin De Groote, assignor to Tretolite Co. Filed (first three) Dec. 24, 1936, and (last two) Feb. 15, 1937. Nos. 2,083,221, 2,083,222, 2,083,223, 2,083,224, and 2,083,225.

Solvent extraction—Vandeveer Voorhees, Hammond, Ind., assignor to Standard Oil Co. (Ind.) Filed Apr. 24, 1933. No. 2,083,250.

Method for refining hydrocarbons—Issar Budowski, Paris, France. Filed Mar. 21, 1935. No. 2,083,253.

Refining mineral oil—Malcolm H. Tuttle, New Rochelle, N. Y., assignor to Max B. Miller & Co., New York, N. Y. Filed Nov. 20, 1933. No. 2,083,511.

MISCELLANEOUS

Grease manufacture—Charles O. Greenlee, Casper, Wyo., assignor to Standard Oil Co. (Ind.) Filed June 5, 1935. No. 2,083,015.

Automatic shut-off for gasoline-dispensing nozzles—Frank V. Mayo, Stockton, Calif. Filed Apr. 20, 1935. No. 2,083,078.

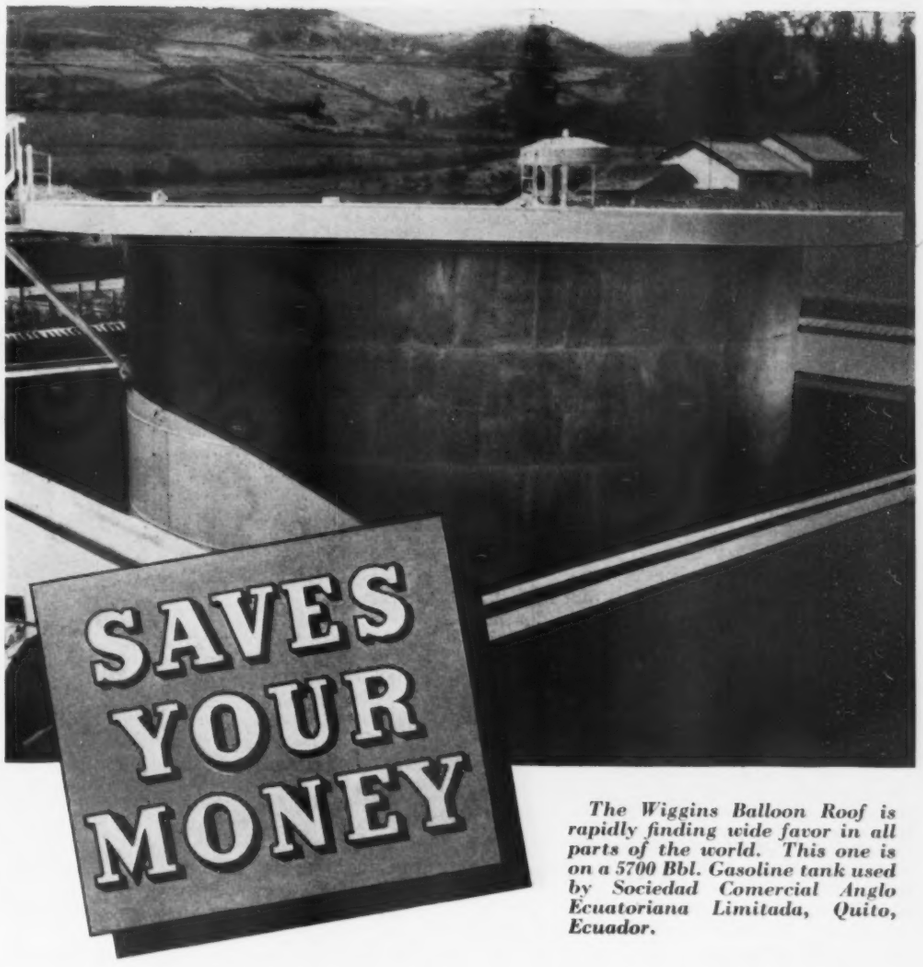
Lubricating oil—Kenneth Taylor, Chicago, Ill., and Bernard H. Shoemaker, Hammond, Ind., assignors to Standard Oil Co. (Ind.) Filed Feb. 23, 1933. No. 2,083,247.

Lubricant servicing apparatus—Charles W. Ginter, Bryan, Ohio, assignor to Aro Equipment Corp., same place. Filed Oct. 1, 1935. No. 2,083,259.

Pack for dispensing lubricating oils—Albert R. Speare, Weston, Mass. Filed Nov. 3, 1933. No. 2,083,479.

Aqueous bituminous emulsion and process of producing same, and process of producing aqueous bituminous emulsions—Charles K. Hewes, Los Angeles, and Marvin L. Chappell, Watson, Calif., assignors to Richfield Oil Corp. Filed Oct. 22, 1935. Nos. 2,083,498 and 2,083,499.

The new WIGGINS BALLOON ROOF



The Wiggins Balloon Roof is rapidly finding wide favor in all parts of the world. This one is on a 5700 Bbl. Gasoline tank used by Sociedad Comercial Anglo Ecuatoriana Limitada, Quito, Ecuador.

GASOLINE is money! Like money, it can slip away from you almost before you know it—if you don't take steps to protect yourself against loss. That's why we believe you will want to make a careful investigation of the new opportunities offered by the Wiggins Balloon Roof.

This new mechanical development is particularly applicable to flat-bottom storage tanks used by marketing organizations. It prevents evaporation loss by being able to expand and make room for excess vapor which would otherwise be vented out to the atmosphere. It is simple and foolproof in principle and requires no more maintenance or attention than an ordinary roof. You get this money-making improvement at a cost that is quickly offset by savings.

We will be glad to tell you all about it. Call or write our nearest office.

Chicago Bridge & Iron Company

Cleveland	2206 Rockefeller Bldg.	Dallas	1439 Liberty Bank Bldg.
Chicago	2125 Old Colony Bldg.	Birmingham	1534 N. Fiftieth Street
New York	3345—165 Broadway Bldg.	Houston	2919 Main Street
Philadelphia	1614—1700 Walnut Street Bldg.	Tulsa	1607 Hunt Bldg.
Boston	1516 Consolidated Gas Bldg.	San Francisco	1060 Rialto Bldg.
Detroit	1513 Lafayette Bldg.	Los Angeles	1422 Wm. Fox Bldg.

FABRICATING PLANTS in Birmingham, Chicago, and Greenville, Pa.

Independent Built Up His Business In Major Companies' Dooryard

AN INDEPENDENT jobber in Union City, New Jersey, has built up a good business practically in the shadow of the headquarters and refineries of some of the country's largest oil companies.

Charles F. Block, as head of the Owl Oil & Supply Co., is just across the Hudson river from Manhattan Island. In fact, if 50th Street in New York City were to extend across the river it would pass right by his plant. Then too, he is next door neighbour to the towns of Bayway and Bayonne, where large refineries are located.

In spite of this close proximity to the major company battle grounds, Block, an independent, started an oil jobbing business in Union City 15 years ago. Today, he will tell you that he has no quarrel with the major companies; in fact he lists some of their representatives among his best friends.

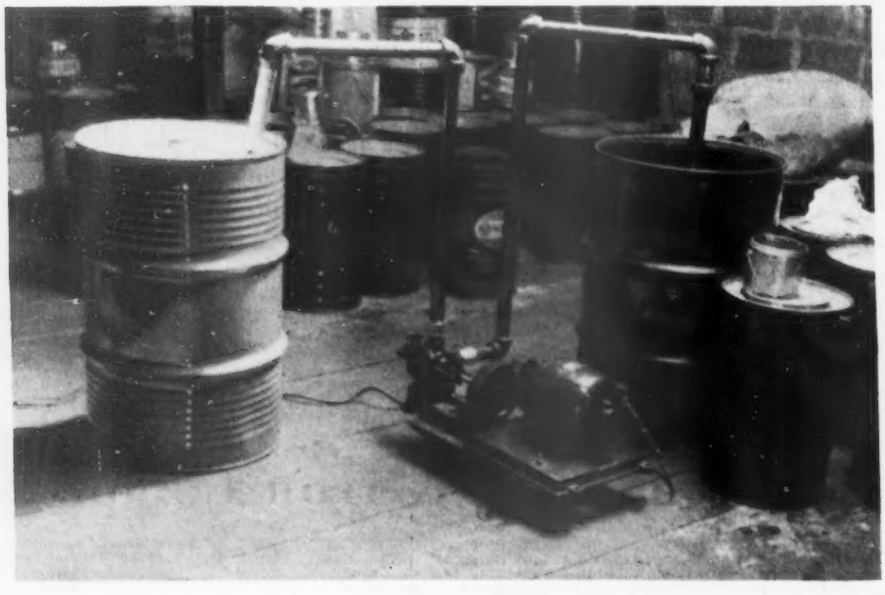
Block is in the business of distributing oils, greases, and anti-freeze to industrial plants, car dealers, service stations and garages. His largest volume of business is obtained from industrial plants and from truck and bus fleet owners. His greases and lubricating oils, sold both under his own brand name and that of a Pennsylvania refiner, find their way into the machinery and trucks of plants that manufacture a number of diversified items such as silks, dress goods, and electrical appliances.

Headquarters of the Owl Oil & Supply Co., Union City, N. J. The building contains 5000 square feet of floor space and has a loading dock on the inside which will accommodate two trucks at the same time

His industrial products for plants range from engine, cylinder, machine and white oils, to specialty greases.

Just recently moved to a new and enlarged location in Union City, the Owl Oil & Supply Co. plant now has 5000 square feet of floor space with an inside loading dock for the company's two stake trucks to load and unload merchandise. All incoming shipments of the Owl company are made in drums, delivered by truck.

Block employs three salesmen to solicit the car dealers and independent service stations, while he and another salesman contact the industrial plants in the territory. Block's company sells in three counties in northern New Jersey, which include about 12 towns.



This motor and pump contrivance is used to transfer products from one drum to another in the plant of the Owl Oil & Supply Co. The motor is 1½ h.p., and the pump has a capacity of 25 gallons per minute. Mounted on a small dolly truck, the unit may be easily moved about the plant

IN an address given before the Pennsylvania Grade Crude Oil Assn. at its last annual convention, Block gave an address on "The Jobber's Job From the Jobber's Viewpoint," in which he expressed the key to his success as an independent.

At that time he said; "Having a complete knowledge of your entire line, as well as a fair knowledge of kindred lines that your customers deal in, is one of the strongest points in favor of good service."

He continued by saying that "a service which includes the understanding of systematizing our customer's business, with a view to saving time and obtaining more business for that customer, will indeed pay splendid dividends."

Block has followed his own preachments. In his industrial accounts he knows his customers' problems. He has studied their operations and their mechanical equipment. On many occasions he has worked side by side with one

Mr. Distributor...

MEET AND BEAT COMPETITION WITH THESE SURE-FIRE CITIES SERVICE SALES IDEAS!

The cream of pre-tested sales promotion plans available to you

If you're at the end of your rope for new ideas . . . if competition in your territory is burning hot . . . you have no time to lose in experimenting with raw, untried ideas. Let Cities Service solve your problem with new but *pre-tested* ideas.

Cities Service salesmen in 38 states have gathered the cream of promotion plans that produce. They have produced profitably for others . . . they will do the same for you. These ideas are a part of the Cities Service Proved Sales Plan that sold millions of gallons of new business during the worst years of the depression. Let it help you meet and beat competition . . . increase your gallonage and profits. Write, wire or 'phone today for more details. Don't let competition get you down . . . mentally or financially . . . when you have a sure-fire means of beating it.

CITIES SERVICE

RADIO CONCERTS . . . *every Friday at 8 P. M. (E.D.T.) . . . WEAF and 43 associated N.B.C. stations*

CITIES SERVICE OIL CO.
Detroit, Mich.

CITIES SERVICE OIL CO.
Chicago, Ill.

CITIES SERVICE OIL CO.
Milwaukee, Wis.

CITIES SERVICE OIL CO.
Cleveland, Ohio

CITIES SERVICE OIL CO.
Boston, Mass.

CITIES SERVICE OIL CO.
New York, N. Y.

EMPIRE OIL & REFINING CO.
Tulsa, Okla.

CITIES SERVICE OIL CO.
St. Louis, Mo.

CITIES SERVICE OIL CO., LTD.
Toronto, Ont., Canada

ARKANSAS FUEL OIL CO.
Shreveport, La.

CITIES SERVICE OILS AND GASOLENES

Happy Motoring

ESSO STATION

NOT CONNECTED
With
Standard Oil Company
(Indiana)

Supplies and services are available at the Esso signs identifying thousands of American and foreign filling stations, selling motor fuels and lubricants from the world's largest refineries and most extensive petroleum research and development laboratories.

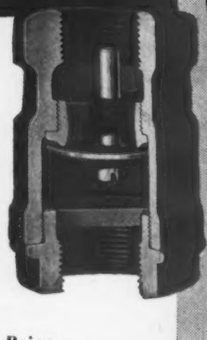
ESSO, INC.
26 Broadway, New York

The word ESSO is "A sign of service and a symbol of quality"

ESSO—for Premium Motor Fuel ESSO MOTOR OIL—for Premium Motor Oil
ESSOLENE—for Regular Motor Fuel ESSOLUBE—for Regular Motor Oil

MORRISON BROTHERS

Foot VALVES



Every pump needs a MORRISON FOOT VALVE . . . because they stay TIGHT. 34 varieties and sizes . . . engineered to handle latest types of gasolines. For accuracy . . . for positive action . . . for long life . . . use genuine MORRISON FOOT VALVES.

Write for FREE Folder and Prices

MORRISON BROS. CO.
DUBUQUE, IOWA

OIL EQUIPMENT HEADQUARTERS

of his customer's mechanics, dismantling a piece of equipment to determine some fault or to study the effect of the use of a certain type of lubricant in that equipment.

To Block, service is more than a word. It is a creed which he practices with his customers. This personal service, plus his wide and close acquaintanceship with his customers and their problems, and plus his company's ability to get special or routine shipments to customers on "a moment's notice," are given as the primary reasons why his company is successful in the midst of this territory which is the home of the large oil companies.

For filling small orders of special blends of oils and lubricants quickly, the Owl

Charles F. Block, head of the Owl Oil & Supply Co. He has been a jobber in Union City, N. J., for 15 years

company uses a small portable electrically-driven mixing paddle which clamps onto the side of the mixing drum. The company has no large storage tanks, preferring to keep all of its stock in the conventional drums.

Oil to be transferred from one drum to another, or part of which is to be added to another drum for a blend, is handled through a portable transfer pump. The pump and electric motor are mounted on a small dolly truck, and 1½-inch pipe risers extend up from the suction and discharge ends of the pump. The motor has a 1½-horsepower rating, and the pump has a capacity of 25 gallons per minute.

Resting on the window sill in a back room of the Owl plant, overlooking the Hudson river, is a pair of binoculars, placed there for the use of those who want a close-up view of the New York skyline. Block confessed that he had done little looking through those glasses. And when you know Block, you know why he does little skyline gazing. He is busy keeping his eyes on his customers.

But Block is not content with merely operating a successful business. He has a sort of restless determination about him. His newest venture is into the field of service station equipment, including lubrication dispensing equipment, lifts and air compressors, which he plans to sell to independent service stations.

NEW EQUIPMENT
And the Manufacturer

Service Station Equipment

Cincinnati Ball Crank Co. and the Brookins Division announce their new 1937-38 catalogs are ready for distribution. There are two separate catalogs. One is confined to lubrication equipment and the other to Brookins service station necessities.

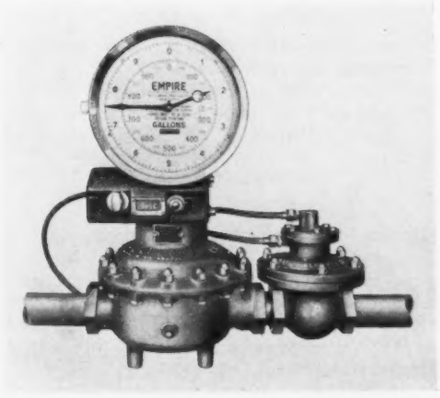
The Balcrank catalog was designed to present a new line of lubrication equipment and to sell lubrication and its importance to operators of a greasing department. The catalog points out that "there's profits in lubrication both direct and indirect if the operators will dress up this department to instill confidence of the motorists." Equipment illustrated in color show the possibilities in this direction.

* * *

Truck Meter

A new automatic pre-determined shut-off mechanism for Empire petroleum meters on tank trucks is announced by the National Meter Co., Brooklyn. Designed for use with 1¼ to 3-inch Empire meters on tank trucks, this unit prevents overfilling and spilling, it is said.

The Empire Hydro-Measure-Matic meter consists of an Empire meter with a pre-set register interconnected with a hydraulic valve by copper tubing. One



of the features is slowing shut-off when delivery nears completion reaching an intermediate position with the last half-gallon and closing the final fraction of an inch when the register reaches zero. Advantages of this action are elimination of line hammer and prevention of the last gallons from foaming over. Emergency stops can be made, however, in quicker time.

* * *

Portable Extinguisher

"Instant Death to Any Fire" is the title of a new illustrated booklet describing the latest portable equipment available for extinguishing fires with Lux (carbon dioxide). Design improvements made early in 1937 are included in this pamphlet now being distributed by Walter Kidde & Co., Bloomfield, N. J.

FOR THE MOTOR THAT CUTS GAS-PUMP SERVICING EXPENSE

Specify

The G-E Capacitor-Motor

MR. EXECUTIVE — *This motor will lower repair and maintenance expense*

MR. ENGINEER — *It is adaptable to any gasoline pump*

MR. OPERATOR—*It gives instant service at 30 below or at 110 in the shade*

No Brushes to Replace
No Commutator to Service
Few Wearing Parts

IT will operate for years with little or no attention — requires oiling but once a year. That's why so many of the late gasoline-dispensing pumps are equipped with G-E explosion-proof capacitor-motors. Makers and users alike know that G-E capacitor-motors are economical to operate and very reliable, for more than a million of them are giving trouble-free, dependable operation on such devices as refrigerators, stokers, and pumps.

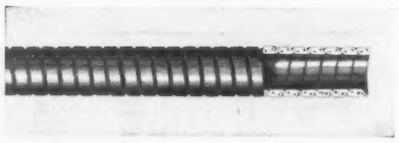
All working and electric parts — including the line switch—of the G-E explosion-proof capacitor-motor are contained in the motor enclosure. This motor is listed by the Underwriters' Laboratories, Inc., for operation in Class I, Group D, hazardous gas locations.

The operating economy and high starting torque of G-E capacitor-motors make them equally desirable for operating station air compressors and automobile lifts. Why not investigate the money-saving advantages of this motor now? Write to General Electric, Dept. 6B 201, Schenectady, N. Y., for GEA-2277 and GEA-977C, or contact the nearest G-E sales office.

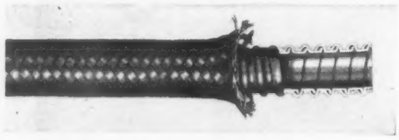
Built by Men Who Know Motors, for Men Who Know Pumps

GENERAL ELECTRIC

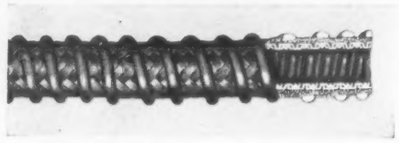
070-185



Std. 4-Wall Interlocking Joint



High Ridge—With or Without Braid



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NEW DATA *on* *Galv. Steel* and Bronze *Flexible* Pipe

What pressures will it stand; how much will it bend; where can you use it; why is it so safe? When you know the answers, you'll know how to save important money! Get this data at once.

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Pennsylvania Flexible Metallic Tubing Co.
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Automotive

NOTES AND COMMENTS

By **JOHN W. THOMPSON**
N. P. N. Staff Writer

THOSE union organizers who, a few weeks ago, came to the Ford plant in Detroit to pass out handbills, might have saved themselves some embarrassment and bruised skulls if they had taken a look at the record before attempting to "improve" the working conditions of the Ford employes.

For, on July 1, the average daily wage of the 86,899 Ford factory employes in the Detroit district was $7.26, an average of 90¼ cents an hour. The largest single group of employes, 29,464, are paid 90 cents an hour, or $7.20 a day. Only 5598 Ford workers are paid the minimum of 75 cents an hour, or $6 a day.

The Ford company employs 10,000 disabled men, who were handicapped at the time of hire. These men, including 34 who are blind, work at odd jobs set aside for invalids.

All that is needed to spoil this situation is some renewed activity by the union or some ultra-modern decisions by the National Labor Relations Board.

* * *

And while we are still on Ford, there's the subject of attachments and auxiliary equipment for Ford cars, of which there is about every type available, except possibly a bacon slicer. It is possible, of course, that even that may be available for the Ford owner before this gets into print.

One of the latest wrinkles is a four-wheel drive conversion for Ford passenger cars, with low pressure tires. Rural mail carriers are reported to be going for this design like "hot cakes," as the saying goes, because you and I know that the mail must go through, no matter what the weather.

"Nor wind nor snow nor sleet, etc. etc." must stay the mail man in his efforts to collect the postage due on the letter you received from your Aunt Crambie.

* * *

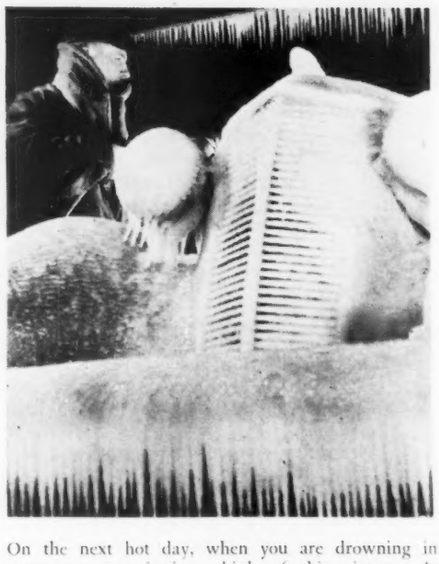
Whether it's the influence of the rhumba, the cuban godango, or what, a new kind of auto race recently stirred up a lot of comment among the natives of Havana. The object of the race was to see how slowly the cars could cover a specified course of 547 yards without stalling the engines.

The winner, a Ford V-8 with 60-horsepower engine, "won" the race, covering the course in 57 minutes and 12 seconds, which, according to our seriously warped slide rule, is a speed of about one-third of a mile per hour.

But then, only Cuba could put on such a "revolutionary" race.

* * *

A cagey New Jersey used car dealer has hit upon the idea of giving away a barrel of gasoline with every sale during the slack business season. Which has led some wag at Studebaker to predict that next year every trailer will come equipped with a box of canned soup and a ham.



On the next hot day, when you are drowning in your own perspiration, think of this picture. At least you'll know that some Studebaker engineers in South Bend are enjoying this cold room where winter automotive tests are being made

* * *

A rather startling indication of the demand for the low priced Packards, the Six and the 120, is reflected in the fact that Packard production in the first half of 1937 was 2648 per cent greater, or more than 27 times that of the first half of 1934, the year immediately preceding the introduction of the 120.

An increase of 2648 per cent is quite a tidy increase, we are informed by our statistical bureau, and at first glance it would seem that the bureau might be justified in its statement. If this pace keeps up the company will soon be able to change its slogan to "Ask the Men Who Own One."

* * *

It is purely conjecture on our part in pointing out that one 1938 Ford model may possibly be equipped with an oil filter similar to that now used on the Lincoln-Zephyr and Studebaker. If so, it would add quite a sizable figure to the number of cars whose engine oil specifications read, "change oil twice a year, or every 5000 miles."

If Ford brings out two cars next year, as some predict it will, instead of the present plan of two engines and one body size, the oil filter might logically be considered as a part of the deluxe equipment which Ford will offer on his better models.

But then Ford takes a particular de

light in pulling the chair out from under those of us who insist upon building his car for him. Right this minute he may be considering bringing out a steam calliope instead of a new automobile, just for spite.

* * *

Things begin to look now as though the farmer will get his all-purpose tractor—one which he can use in the field, ride to market and, who knows, maybe use it for Sunday afternoon drives with his family.

For word comes that Graham-Paige in Detroit, makers of Graham automobiles, is making the Graham-Bradley machine, a high-speed tractor which will be sold through the Sears-Roebuck channels. The job is to have a fourth speed for road travel, at 20 miles per hour.

* * *

Studebaker, well pleased with its hypoid axle performance to date, will take no chances on shaking the ladder, and has decided to continue to market and recommend only its own brand of hypoid lubricant for the rest of its 1937 season. What its policy in this regard will be in 1938 is still undetermined, but there are indications that it will not wander far from the path it is making this year.

Do not be surprised if Ford recommends a hypoid lubricant in its rear axles for 1938, but don't look for a hypoid axle, for the chances are against it. Ford has been shopping for prices on large quantities of hypoid lubricants, according to recent reports.

* * *

There are a lot of ways to make the purchase of an automobile painless, and even desirable. Take Cadillac, and LaSalle, for example. They have worked out a merchandising agreement with the principal airlines of the country, whereby the purchaser of a new Cadillac or LaSalle can fly to Detroit, without cost, to take delivery on his car and at the same time receive a check that will cover entirely or partially the expense of the return drive home.

Under the plan, the customer makes the usual financial terms with his local dealer. There is no added cost. Instead of taking the car from the dealer, however, the buyer is handed an airline ticket to Detroit together with additional funds to contribute toward the return journey home.

The expense voucher which the dealer gives the customer represents the cash differential between the airline ticket fare and the normal automobile freight charge, according to D. E. Ahrens, Cadillac sales manager.

And to think that only 40 years ago Governor Busiel of New Hampshire boldly prophesied, "I have no doubt that, in the near future, when you go to a livery stable to hire a carriage you will be asked the question, whether you want a motor carriage or one drawn by a horse."

* * *

Some day you might want to know that, to obtain enough rubber to make a six-ply tire for a low-priced car, two rubber trees must be tapped for a whole year.

And if you are selling tires, and your prospect complains they cost too much, just remind him that today's automobile

A recent Graver Installation. Capacity, 134,000 barrels.

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Into every Graver Tank and Steel Structure is built unsurpassed endurance—the result of three-quarters of a century experience in skilled designing, fabricating and erecting leak-proof vessels for every conceivable purpose.

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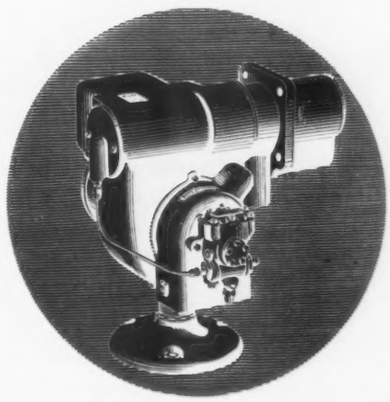

Next winter, when the gas pumps aren't doing so well, it will be nice to know you can fall back on the income from the sale of fuel oil for the PATENTED BETTENDORF DOUBLE-HEAT BURNERS installed this summer.

When you sell a customer a BETTENDORF DOUBLE-HEAT OIL BURNER, you sell him the last word in Automatic Home Heating — recognized by leading engineers everywhere as the crowning achievement in oil burner performance, economy, low upkeep and long life.

No wonder BETTENDORF BURNERS are the most widely imitated on the market.

Sell the original Bettendorf and control your market. Write or wire today for full information. You can't afford to miss the liberal Bettendorf offer.

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OIL BURNERS

tires cost one-fourth as much and last 10 times as long as those made before the World War.

* * *

How fast can you peddle a bicycle; that is if you can peddle one at all? Ah, see, you don't know, do you? Well, do you know how fast Albert Marquet, the French cyclist, can peddle one? The answer is 90 miles per hour.

Following a Cord car equipped with a wind divider at the rear to make a path for him, Albert recently hit an official speed of 90 and set a world's record on a Los Angeles track at 86.95 miles per hour.

Aside from proving that Albert and the Cord can do 90, this also proves that the sport of cycling is keeping close on the heels of motoring.

Talks on Oil Chemistry

CHICAGO, Aug. 9.—Dr. Charles L. Thomas, of Universal Oil Products Co., Aug. 6 addressed the students and faculty of the chemistry department of Northwestern University on "The Chemistry of Petroleum and Petroleum Products."

The lecture is one of a series being given by specialists in various fields to acquaint the students with the chemistry involved in the principal industries.

Fire Fighting Show

HOUSTON, Aug. 7.—Management of the Oil-World Exposition, to be held in Houston, Oct. 11-16, has arranged for a fire-fighting demonstration during the show. Myron M. Kinley, world famous battler of oil and gas well fires, will be in charge. He will show how flames are put out by the use of gelatin.

Made Vice President Of Sunset Oil Co.

LOS ANGELES, Aug. 7.—William F. Barshfield was recently made vice president in charge of sales for Sunset Oil Co., Pacific Coast independent.

Although born in Kansas City, Mr. Barshfield came to California in 1909, where he became sales manager of the Puente Oil Co. He joined Sunset in 1923 as sales manager, a position he held until his recent advancement.

Mr. Barshfield was a pioneer in the operation of drive-in service stations in Los Angeles and was one of the first to experiment in delivering gasoline by automotive trucks during the days of two-cylinder motors. He drove one of the first two trucks used in this area to distribute gasoline.

William F. Barshfield

Los Angeles Office

LOS ANGELES, Aug. 9. — Donnelly Process Corp. of Chicago has opened offices in the Rowan Bldg., Los Angeles. A survey of Pacific Coast refining facilities is being made under the direction of Shelby Black.

This company licenses the Donnelly cracking process, and has been active for some years in the east, midwest and Mid-Continent sections of the refining industry. J. F. Donnelly, president of the company, is expected to arrive at Los Angeles early in August.

Oil Burner Shipments

WASHINGTON, Aug. 9.—Almost twice as many distillate burners were shipped by U. S. firms in the first six months of 1937 as in the same period last year, according to the Bureau of the Census.

In the first half or the current year the American manufacturers shipped 110,300 such burners, compared with 67,104 in the same period last year and 31,175 the year before. The figures include the burners used in ranges, stoves, water heaters and space heaters.

When in the market for high quality . . .

. . . Pennsylvania Bright Stocks and Neutrals, we ask that you direct your inquiries to BERRY'S.

Our stocks are manufactured exclusively from pure Pennsylvania crude oil and we are always in position to serve you promptly from one of our refineries most advantageous to you.

We use only the latest methods of refining which guarantees you the high quality products you are looking for.

JAMES B. BERRY SONS' CO., INC. OIL CITY, PA.

Branch Offices: New York City; Chicago, Ill.; Boston, Mass.; Philadelphia, Pa.; Houston, Texas; London, England; Hamburg, Germany; The Hague, Holland.

Refineries: Oil City, Pa.; Emlenton, Pa.; Farmer's Valley, Pa.; St. Mary's, W. Va.
Ocean Terminals: Baltimore, Md.; Tiverton, R. I.; Dorchester, Mass.; Carteret, N. J.; Edgewater, N. J.; Glastonbury, Conn.; Philadelphia, Pa.

Markets

At A Glance . . .

Mid-Continent: Gasoline unchanged, kerosine stronger.

Mid-Western: Low of price range drops.

Eastern Seaboard: Gasoline lower in Boston.

Pennsylvania: "Lubes" more active.

Gulf Coast: Cargo market quiet.

California: Burning oils advance.

Wax: Little export interest.

Mid-Western

Low of Range Drops

N. P. N. News Bureau

CHICAGO, Aug. 9.—The low of the price range on U. S. Motor gasoline, below 62 octane and 68-70 octane grades dropped .125-cent in the Mid-Western market last week.

Spot market buying by jobbers continued light. Retail prices continued such as to make it more advantageous for jobbers to take out gasoline on contracts rather than purchase on the open market.

Several sellers, however, reported a good jobber movement on gasoline. One refiner had an active 65 octane market.

Reports from the field indicated refiners had been pushing gasoline sales on the 68-70 octane grade. Refiners were reported seeking shipping instructions. A jobber who might take five cars or more was urged to buy to the point of the refiner asking the jobber to name his price.

Kerosine and distillate, for tractor fuel, were inquired about by jobbers in anticipation of the fall tractor season. Sellers reported they could do business on low prices. One refiner was not seeking kerosine business, preferring to wait for the fall season.

Mid-Continent

Gasoline Unchanged

N. P. N. News Bureau

TULSA, Aug. 9. — Mid-Continent gasoline prices remained steady the first week of August. Tightening of resale prices the previous week was not followed through by similar advances in quotations to jobbers. Most refiners indicated they were waiting for a sounder dealer tank wagon market before advancing tank car quotations. Gasoline purchased under marginal contracts below current tank car prices provided a barrier to higher gasoline prices in the Mid-Continent, refiners said.

Gasoline stocks at most Mid-Continent refineries were fairly low, according to most reports. Two or three refiners were buying gasoline in the open market to cover commitments. Others were limiting sales to regular customers.

Kerosine market showed definite improvement last week. Supplies were scarcer. Inquiry has picked up considerably and buyers were more willing to pay current prices. More refiners were quoting the top of published price ranges.

Demand for Grade 26-70 natural gasoline was slower. Buyers were not so insistent in their inquiries for supplies. Prices, however, were firmly entrenched at 4 cents f.o.b. Group 3, 4.125 cents f.o.b. Breckenridge.

While open market movement of lubricating oil was rather sluggish, shipments against contracts continued heavy. One manufacturer reported export demand had increased.

California

Burning Oils Higher

N. P. N. News Bureau

LOS ANGELES, August 7.—A boost in burning oil prices, talked of for some time, and increased interest in California gasoline for offshore shipment, featured local markets last week.

Early in the week Standard of California advanced its posted prices on tank car quantities of diesel fuel oil and stove distillate 1 and 2 cents respectively. This raised diesel to 5 cents a gallon in the Los Angeles and San Joaquin Valley areas and to 5.50 cents at San Francisco. Stove distillate's jump of two cents meant 7 cents a gallon at plants in the Los Angeles and "Valley" territories and 7.50 cents in the San Francisco area. Other suppliers met these advances.

Independent suppliers did not have such exalted opinions on the value of their burning oils. Light colored gas oil was available at 3 to 3.25 cents a gallon at Los Angeles Basin plants and stove distillate was sold in small quantities at 3.50 cents —3.75 cents was thought to be more in line with current offerings.

Gasoline at independent plants was offered at 7.75 cents at the rack for third grade products, exclusive of all tax. Sales were reported ranging from this figure on up to 8.25 and 8.50 cents. A flurry of price cutting was noted at stations handling the cut-price products.

With Pacific Coast suppliers apparently out of the Atlantic foreign market for the time being, attention was devoted to sizable inquiries being received from Pacific foreign points. Inquiry for 6 or 8 cargoes of gasoline were reported received. Japan was indicated as the most interested party. Suppliers were reported asking 6.125 cents for a 420 to 425 e.p., less than 65 octane, product and upwards of 6.25 for a 400 e.p. or under, higher than 65, octane grade of gasoline. At least two cargoes of aviation gasoline have been sold to the Far East in recent weeks.

N. P. N. Gasoline Index

	Dealer T.w. Cents per	Tank Car gal.
Aug. 9	10.68	6.74
Month ago	10.52	6.74
Year ago	10.32	6.43

Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities.

Tank car index is a weighted average of 13 wholesale markets for regular-grade gasoline.

Wax

Scale Listless

NEW YORK, Aug. 9.—The crude scale market was listless the past week, at least so far as open market buying was concerned. Both buyers and sellers reported no particular changes were apparent either in movement or prices.

Traders said that no large offerings of white scale were being made in the open market. Domestic buying has been steady, suppliers stated, but export buyers still lacked interest in the market. The sale of two parcels of white scale for export movement at 3 cents a pound New York basis was reported. Some white scale was reported available at 2.95 cents a pound.

Pennsylvania

Lube Trading More Active

N. P. N. News Bureau

CLEVELAND, Aug. 9. — Little change was noted in the general market situation in western Pennsylvania the first week of August. Gasoline, kerosine and fuel oil continued firm and lubricating oils appeared steadier than for several weeks.

More inter-refinery buying of lubricating oils was reported from some quarters and for the most part "lube" activity continued to be confined to this type of trading. Some sellers reported increased call from jobbers for shipments of motor oils against contracts. Exporters,

(*Continued on page* 60)

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). Prices in cents per gallon, except heavy fuel oils in dollars per barrel, tank car lots, f.o.b. refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included, unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Gasoline *and* Naphtha

Prices Effective	Aug. 9	Aug. 2
OKLAHOMA		
U. S. Motor:		
62 oct. & below	5.00 – 5.25	5.00 – 5.25
63-67 oct.	5.375– 5.75	5.375– 5.75
68-70 oct. (regular)	6.00 – 6.125	6.00 – 6.125
60-62, 400 e.p.	5.00 – 5.25	5.00 – 5.25
64-66, 375 e.p.	*5.125– 5.375	*5.125– 5.375
68-70, 350-360 e.p.	*5.25 – 5.375	*5.25 – 5.375
WESTERN PENNA.		
Bradford-Warren:		
52-54 naphtha	*6.00 – 6.125	*6.00 – 6.125
Motor gasoline:		
U. S. Motor (58-62°)	6.00 – 6.25	6.00 – 6.25
Min. 60 oct.	*7.50 – 7.75	*7.50 – 7.75
Min. 65 oct.	*7.75 – 8.00	*7.75 – 8.00
64-66, 390 e.p.	6.125– 6.25	6.125– 6.25
68-70, 350-360 e.p.	6.25 – 6.375	6.25 – 6.375
Other districts:		
52-54 naphtha	*5.875– 6.00	*5.875– 6.00
54-56 naphtha	*6.00 – 6.125	*6.00 – 6.125
Motor gasoline:		
U. S. Motor (58-62°)	6.00 – 6.125	6.00 – 6.125
Min. 60 oct.	7.375– 7.75	7.375– 7.75
Min. 65 oct.	7.50 – 8.00	7.50 – 8.00
64-66, 390 e.p.	6.00 – 6.125	6.00 – 6.125
68-70, 350-360 e.p.	6.25 – 6.375	6.25 – 6.375
CALIFORNIA (3c tax to be added to prices if used in state)		
U. S. Motor:		
54-58, for instate shipment	7.75 – 9.25	7.50 – 9.25
54-58, for outside state shipment	8.25 – 9.00	8.25 – 9.00
58-61, 375-400 e.p., 65 oct. & above	8.50 – 9.75	8.50 – 9.75
†N. TEX. (For shipment to Texas and N. Mex. destinations; Group 3 prices quoted on northern shipments).		
U. S. Motor:		
62 oct. & below	5.125– 5.25	5.125– 5.25
63-67 oct.	5.50 – 5.625	5.50 – 5.625
68-70 oct. (regular)	6.00 – 6.25	6.00 – 6.25
60-62, 400 e.p.	*5.125– 5.375	*5.125– 5.375
KANSAS (For Kansas destinations only)		
U. S. Motor:		
62 oct. & below	5.375– 5.625	5.375– 5.625
68-70 oct. (regular)	6.375– 6.625	6.375– 6.625
†W. TEX. & N. MEX.		
U. S. Motor:		
62 oct. & below	5.125	5.125
63-67 oct.	5.50	5.50
68-70 oct. (regular)	6.125	6.125
†E. TEX.		
60-62, 400 e.p.	*5.125– 5.25	*5.125– 5.25
N. LA. (For shipment within La. & into Ark.)		
U. S. Motor:		
62 oct. & below	5.50	5.50
63-67 oct.	5.75 – 6.00	5.75 – 6.00
68-70 oct. (regular)	6.50	6.50
ARKANSAS (For shipment within Ark. & into La.)		
U. S. Motor:		
62 octane & below	5.50	5.50
63-67 oct.	6.00	6.00
OHIO (Quotations of S. O. Ohio. Delivered anywhere in Ohio).		
U. S. Motor	8.75	8.75
Above 65 oct.	9.00	9.00

Natural Gasoline

(Prices are those to blenders on freight basis shown below. Shipments, however, may originate in other Mid-Continent manufacturing districts, such as Panhandle Texas, S. W. Texas or Kans.)

F.O.B. GROUP 3		
Grade 26-70	4.00	4.00
F.O.B. BRECKENRIDGE		
Grade 26-70	4.125	4.125
CALIFORNIA (F.o.b. plants in Los Angeles basin)		
75-85, 350-375 e.p. for blending	7.50 – 7.75	7.75

*Nominal.

‡Only one refiner quoting.

†Refiners report they generally receive from 0.25c to 0.5c per gal. more for gasoline & kerosine for local or differential territory shipment.

Kerosine

Prices Effective	Aug. 9	Aug. 2
WESTERN PENNA.		
Bradford-Warren:		
45 w.w.	5.00 – 5.25	5.00 – 5.25
46 w.w.	5.125– 5.375	5.125– 5.375
47 w.w.	5.25 – 5.50	5.25 – 5.50
Other districts:		
45 w.w.	4.75 – 4.875	4.75 – 4.875
46 w.w.	4.875– 5.00	4.875– 5.00
47 w.w.	5.00 – 5.125	5.00 – 5.125
OKLAHOMA		
41-43	4.00 – 4.25	4.00 – 4.25
42-44 w.w.	4.25 – 4.375	4.25 – 4.375
KANSAS (For Kansas destinations only).		
41-43 w.w.	4.375– 4.50	4.375– 4.50
42-44 w.w.	4.50 – 4.75	4.50 – 4.75
†N. TEX. (For shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments).		
41-43 w.w.	4.25 – 4.375	4.25 – 4.375
†E. TEX.		
41-43 w.w.	*4.00 – 4.125	*3.875– 4.00
N. LA. (For shipment within La. and into Ark.).		
41-43 w.w.	4.625	4.625
ARK. (For shipment within Ark. and into La.).		
41-43 w.w.	‡4.75	‡4.75
CALIFORNIA		
40-43 w.w.	5.00 – 6.00	5.00 – 6.50

Gas *and* Fuel Oils

WESTERN PENNA.		
Bradford-Warren:		
36-40	4.75 – 4.875	4.75 – 4.875
Other districts: (Excluding Pittsburgh District Prices).		
36-40	4.375– 4.50	4.375– 4.50
OKLAHOMA		
No. 1 white	3.875– 4.00	3.875– 4.00
No. 1 straw	3.625– 3.875	3.625– 3.875
No. 2 straw	3.50 – 3.625	3.50 – 3.625
No. 2 dark	3.375– 3.50	3.375– 3.50
U. G. I. gas oil	3.00 – 3.25	3.00 – 3.25
28-30 zero	3.125– 3.375	3.125– 3.375
28-30	‡$1.25	‡$1.25
24-26	‡$0.90 –$0.925	$0.90 –$0.925
18-22	*$0.825–$0.90	*$0.825–$0.90
14-16	*$0.80 –$0.85	*$0.80 –$0.85
KANSAS (For Kans. destinations only).		
No. 1 p.w. fuel oil	4.25	4.25
10-14 fuel oil	$0.775–$0.85	$0.775–$0.85
N. TEX. (For shipment to Texas and N. Mex.; Group 3 prices quoted on northern shipments).		
No. 1 white	*4.00	*4.00
U. G. I. gas oil	2.875	2.875
24-26	$0.85 –$0.875	$0.85 –$0.875
18-22	$0.80 –$0.825	$0.80 –$0.825
N. LA. (For shipment within La. and into Ark.).		
No. 2	3.50 – 3.625	3.50 – 3.625
20-24	$1.10 –$1.15	$1.10 –$1.15
16-20	$0.95 –$1.00	$0.95 –$1.00
10-14	$0.80 –$0.85	$0.80 –$0.85
ARK. (For shipment within Ark. and into La.).		
No. 2	‡3.625	‡3.625
28-30 gas oil, zero	‡3.375	‡3.375
CALIFORNIA		
San Joaquin Valley:		
Heavy fuel	$0.65 –$1.00	$0.65 –$1.00
Light fuel	$0.85 –$1.10	$0.85 –$1.10
Diesel fuel (per gal.)	4.50 – 5.00	3.50 – 4.00
Stove dist. (per gal.)	6.00 – 7.00	4.00 – 5.00
Los Angeles:		
Heavy fuel	$0.60 –$1.10	$0.60 –$1.10
Light fuel	$0.90 –$1.20	$0.90 –$1.20
Diesel fuel (per gal.)	3.50 – 5.00	3.00 – 4.00
Stove dist. (per gal.)	3.75 – 7.00	3.75 – 5.00
San Francisco:		
Heavy fuel	$1.15	$1.15
Light fuel	$1.25	$1.25
Diesel fuel (per gal.)	5.50	4.50
Stove dist. (per gal.)	7.50	5.50

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Neutral Oils

Prices Effective	Aug. 9	Aug. 2
WESTERN PENNA.		
Viscous Neutrals (Viscosity at 70° F.)		
200 Vis. (180 at 100°) No. 3 col., 420-425 fl.:		
0 p.t.	27.00 –27.50	27.00 –28.00
10 p.t.	26.00 –26.50	26.00 –27.00
15 p.t.	25.50 –26.00	25.50 –26.50
25 p.t.	24.50 –25.00	24.50 –25.50
180 Vis. (165 at 100) No. 3 col., 410-415 fl.:		
25 p.t.	23.00 –23.50	23.00 –24.00
150 Vis. (143 at 100) No. 3 col., 400-405 fl.:		
0 p.t.	22.50 –23.00	22.50 –23.50
10 p.t.	21.50 –22.00	21.50 –22.50
15 p.t.	21.00 –21.50	21.00 –22.00
25 p.t.	20.00 –20.50	20.00 –21.00
SOUTH TEXAS		
Vis. Color		
Pale Oils: (*Vis. at 100° F.; p.t. 0*)		
100 No. 1½-2½	5.25 – 5.50	5.25 – 5.50
200 No. 2-3	7.25 – 7.50	7.25 – 7.50
300 No. 2-3	7.75 – 8.00	7.75 – 8.00
500 No. 2½-3½	8.75 – 9.00	8.75 – 9.00
750 No. 3-4	9.25 – 9.50	9.25 – 9.50
1200 No. 3-4	9.75 –10.00	9.75 –10.00
2000 No. 4	10.00 –10.25	10.00 –10.25
Red Oils:		
200 No. 5-6	7.25 – 7.50	7.25 – 7.50
300 No. 5-6	7.75 – 8.00	7.75 – 8.00
500 No. 5-6	8.75 – 9.00	8.75 – 9.00
750 No. 5-6	9.25 – 9.50	9.25 – 9.50
1200 No. 5-6	9.75 –10.00	9.75 –10.00
2000 No. 5-6	10.00 –10.25	10.00 –10.25

Note: South Texas red oil prices shown above cover oils with green cast; blue cast red oils are slightly lower in some cases.

MID-CONTINENT (Vis. at 100° F.; F.o.b. Tulsa basis).

(0 to 10 P.P.)

Vis. Color		
Pale Oils:		
60-85—No. 2	5.50	5.50
86-110—No. 2	6.00	6.00
150—No. 3	9.00	9.00
180—No. 3	10.00	10.00
200—No. 3	10.50	10.50
250—No. 3	11.50	11.50
280—No. 3	12.50	12.50
300—No. 3	13.00	13.00
Red Oils:		
180—No. 5	9.00	9.00
200—No. 5	9.50	9.50
250—No. 5	10.50	10.50
280—No. 5	11.50	11.50
300—No. 5	11.75	11.75

Note: Viscous oils, 15-25 p.p., generally are quoted 0.5c under 0-10 p.p. oils. Non-viscous oils, 15-25 p.p., generally are quoted 0.25c under 0-10 p.p. oils. Viscous oils (150-300 vis.), No. 4 color, generally are quoted 0.5c above No. 5 color oils.

CHICAGO (Vis. at 100° F.)

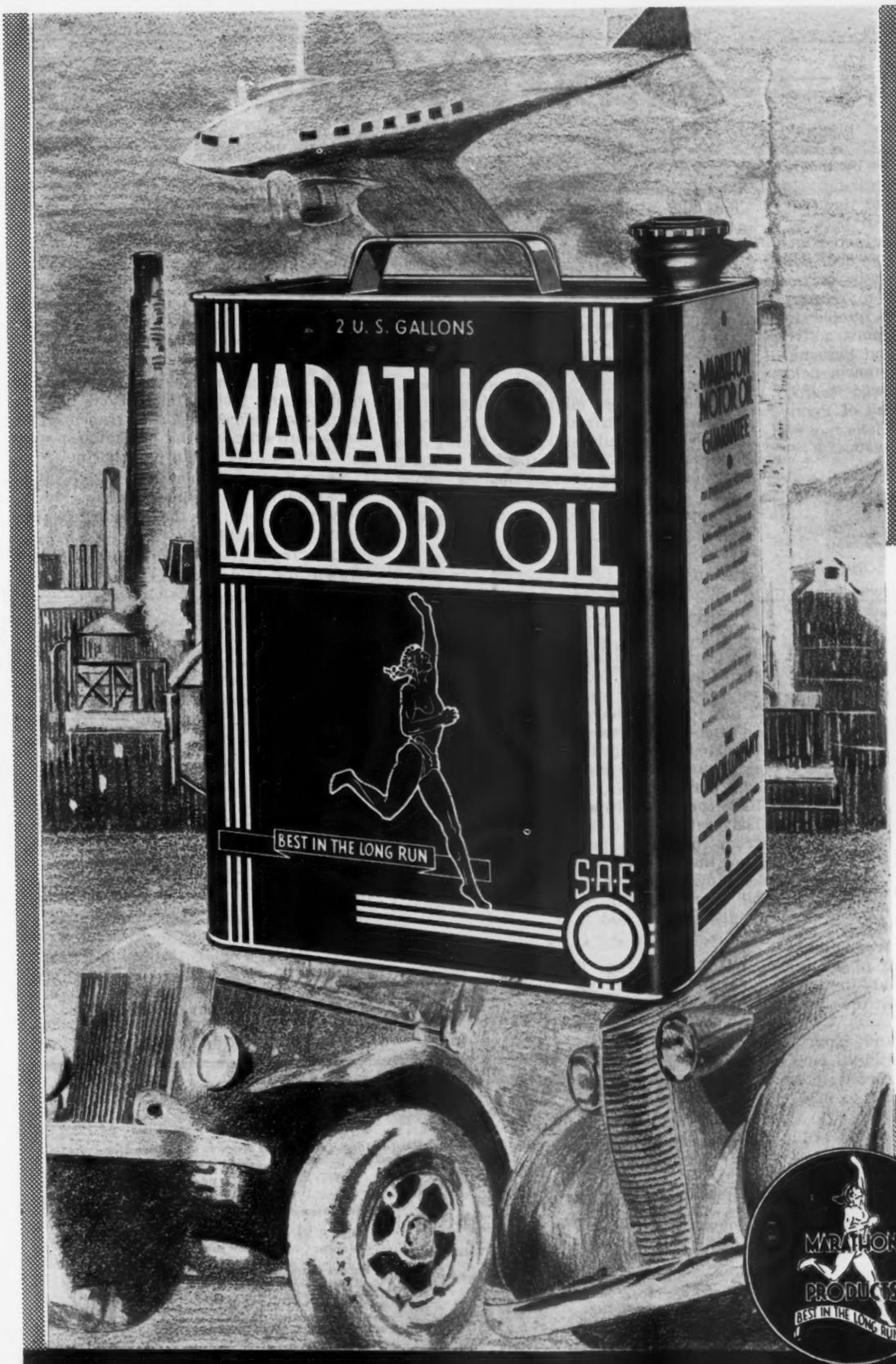
Vis. Color		
Pale Oils **0 to 10 p.p.:		
60-85—No. 2	7.25	7.25
86-110—No. 2	7.75	7.75
150—No. 3	10.00	10.00
180—No. 3	11.00	11.00
200—No. 3	11.50	11.50
250—No. 3	12.50	12.50
Red Oils:		
180—No. 5	10.00	10.00
200—No. 5	10.50	10.50
250—No. 5	11.50	11.50
280—No. 5	12.50	12.50
300—No. 5	12.75	12.75

**Viscous oils, 15 to 30 p.p. are quoted 0.5c lower, 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p. are quoted 0.25c lower. To obtain delivered prices in Chicago, add 0.25c per gal.

Cylinder Stocks

MID-CONTINENT (F.o.b. Tulsa basis).

Bright Stocks:		
190-200 Vis. at 210° D	22.00	22.00
150-160 Vis. at 210° D:		
0 to 10 p.p.	19.00	19.00
10 to 25 p.p.	18.50	18.50
25 to 40 p.p.	18.00	18.00
150-160 vis. at 210° E	18.00	18.00



Marathon Motor Oils are refined at our own strategically located refineries, insuring constant supply to hundreds of jobber and dealer outlets. The Ohio Oil Company invites jobbers to investigate its Exclusive Territory Franchise opportunities TODAY.

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LINCO

THE OHIO OIL COMPANY

GENERAL OFFICES - - - - FINDLAY, OHIO

ROBINSON, ILLINOIS — TULSA, OKLAHOMA — FT. WORTH, TEXAS

Pennsylvania

(Continued from page 57)

however, showed no interest in the market.

Several large blocks of 600 filterable steam refined stock were said to have been taken out of the market by bright stock manufacturers for processing. In some quarters it was indicated that any surplus 600 which might appear between now and Dec. 31 had been contracted for. Deals involving close to 5,000,000 gallons were reported closed.

Bright stock was available to refiners at considerably under prices quoted to jobbers. Neutral oils were more active and prices firmer. Fuel oil and kerosine were offered less freely in the lower field and these two items continued scarce in the north field. A barge load of Pennsylvania kerosine was said to have moved from Buffalo to the eastern seaboard recently.

Coastal

One Cargo Sold

N. P. N. News Bureau

NEW YORK, Aug. 9.—Cargo markets were quiet at the Gulf the past week, with only one open market cargo sale reported. Commodities generally were reported steady, however, with traders stating the dullness was caused as much by lack of offers to sell as attempts to buy.

The sale, made early in the week, involved a cargo of half 41-43 w.w. kerosine and half 64-66, 375 e.p. gasoline for Sept. 15-Oct. 15 lifting to France. The buyer paid 5 cents f.o.b. Gulf for the kerosine and 6.375 cents for the gasoline.

The kerosine sale was the first open market movement of this product reported for several months, although traders had been reporting a steady market at around 4.875 to 5 cents. Prior to this sale, several traders said they had offers to buy at 4.875 cents but were unwilling to sell at under 5 cents. The price paid for the gasoline was the same as for the last three or four cargoes sold.

Demand for light fuel oil and export grades of gas oil was reported light, but traders said little was being offered and that prices were steady at 4.125 to 4.25 cents.

Bunker fuel oil was more freely offered at unchanged prices.

Eastern

Boston Gasoline Lower

N. P. N. News Bureau

NEW YORK, Aug. 9.—Tank car gasoline prices were lowered 0.25 cent by some suppliers in Boston district last week, marking the first break in the general market structure for some time. Unsettled service station markets have prevailed off and on in several sections of the eastern seaboard, but tank car prices had held steady in most instances.

The reduction at Boston brought tank car prices of 65 octane and above grade to 7.50 cents in some quarters. One supplier said that the gasoline market still was tight insofar as stock position was concerned, but that he was forced to the

(Continued on page 64)

Fuel Oil . . . . .

TULSA, Aug. 9.—Majority of Mid-Continent refiners either were not making light fuel oil or were storing their output, a survey last week indicated. Few refiners were supplying any of the numerous and insistent inquiries going the rounds.

Inquiries indicated that buyers, having searched the market for bargains, were now willing to pay the lows of published prices for light fuel.

Reports early last week that railroads had reduced their takings of heavy fuel could not be confirmed. A check, however, revealed the roads still were taking the maximum amount of oil specified in their contracts. There were isolated cases where shipments had been held up due to shipping conjestion. This condition was temporary.

U. G. I. gas oil was in active demand as cracking stock.

* * *

NEW YORK, Aug. 9.—Light fuel oils continued in the grip of the usual off-season buying lull along the eastern seaboard last week. However, most suppliers reported a fairly steady movement of No. 2 fuel to jobber buyers.

Tank car and barge selling prices were reported unchanged over the week. Several buyers said they were unable to obtain barges of No. 2 fuel oil at less than 5.125 cents f.ob. New York harbor. While boat rates had come down considerably from their high peak of several weeks ago, the recessions were not enough to lead towards any heavy movement of fuel oil from the Gulf to northern seaboard points, traders said.

* * *

CHICAGO, Aug. 9.—Seasonal factors governed demand for fuel oils in Chicago last week, the trade reported.

Industrial activity has been curtailed through the usual mid-summer shut downs, vacations, and inventory taking. Industrial buyers were reported withholding purchases or were asking that shipments be delayed pending resumption of full activity.

Jobber buying for current consumption requirements also was affected by the seasonal factors, the trade reported, as domestic demand is now at low ebb.

The Chicago market had numerous inquiries from jobbers on fuel oils for storage. One refiner reported franchise jobbers were entering the market last week for next winter requirements.

Several sellers reported jobbers who delayed buying for winter storage during July began entering the market after the turn of the month.

East Texas fuel oils are reported withdrawn for mid-western shipment, these oils now moving to the Gulf coast.

NEW YORK, Aug. 9. — B. H. Faulkner of Montclair, N. J., secretary-treasurer of Amiranian Oil Co., Seaboard Oil Co. and Inland Exploration Co., returned July 23 from a short vacation in Europe with his sons.

NEW YORK, Aug. 9. — Frederick G. Clapp of Bronxville, N. Y., who has accepted the position of vice-president of Amiranian Oil Co. and Inland Exploration Co., is to leave Aug. 17 to take charge of explorations of these companies in Asia. Amiranian has a concession on nearly 200,000 square miles in northern and eastern Iran and Inland has similar rights covering Afghanistan — an area of some 240,000 square miles.

TANK WAGON MARKETS, HEATING OILS

Prices in Effect Aug. 9, 1937

Following are tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon.

	No. 1	No. 2	No. 3	No. 4
S. O. NEW JERSEY				
Newark, N. J.	*	7.00	7.00	7.00
Atlantic City, N. J.	*	6.75	6.75	6.75
Baltimore, Md.	7.50	7.00	7.00	7.00
Washington, D. C.	7.75	7.25	7.25	7.25
SOCONY-VACUUM OIL CO., INC. (S. O. New York Division)				
New York City	*	7.50	7.50	7.50
Albany, N. Y.	*	7.50	7.50	7.50
Rochester, N. Y.	*	7.50	7.50	7.50
Boston, Mass.	*	7.00	7.00	7.00
Bangor, Me.	*	8.00	8.00	8.00
Manchester, N. H.	*	8.00	8.00	8.00
Burlington, Vt.	*	8.00	8.00	8.00
New Haven, Conn.	*	7.50	7.50	7.50
Providence, R. I.	*	6.75	6.75	6.75

*Prices for No. 1 fuel in S. O. New Jersey and Socony-Vacuum territories same as for kerosine, which see in tank wagon table for various cities; prices change with kerosine.

	No. 1	No. 2	No. 3	No. 4
ATLANTIC REFINING				
Philadelphia, Pa.	7.25	6.50	6.50	6.50
Allentown, Pa.	7.25	6.50	6.50	6.50
Wilmington, Del.	7.75	7.00	7.00	7.00
Springfield, Mass.	9.00	7.50	....	7.50
Worcester, Mass.	9.00	7.50	....	7.50
Hartford, Conn.	9.00	7.50	....	7.50

S. O. OHIO

*Ohio Statewide	8.00	8.00	7.50	6.75

Note: S. O. Ohio prices are for hose dumps, bucket dumps are 0.5c per gallon higher.

*Except Cleveland Division and City of Toledo. In Cleveland Division (Cuyahoga, Lake and Geauga counties), No. 1 price is same as statewide; Nos. 2, 3 and 4 are 0.5c higher; No. 5 is priced 0.25c lower than No. 4. In Toledo No. 2 is 0.5c lower than statewide, others same.

S. O. INDIANA

Stanolex Fuel and Furnace Oils

	No. 1 Fuel	Stanolex Furnace
Chicago	7.00	7.00
Indianapolis	....	*11.7
Detroit	....	7.1
Milwaukee	8	7.3
Minneapolis	7.5	7.5
Sioux City	7.1	7.1
St. Louis	7.5	6.8
Kansas City	6.5	6.5

*Includes state tax of 4c.

Note: Small-lot deliveries of light fuel oils range up to 2c higher than above quotations.

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days) unless otherwise stated. Prices in cents per gallon, except heavy fuel oils in dollars per barrel, tank car lots, f.o.b. refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included, unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Cylinder Stocks (cont'd)

Prices Effective	Aug. 9	Aug. 2
Mid-Continent (cont'd)		
120 Vis. at 210° D:		
0 to 10 p.p.	18.00	18.00
10 to 25 p.p.	17.50	17.50
25 to 40 p.p.	17.00	17.00
600 S.R. Dark Green	5.00 – 7.50	5.00 – 7.50
600 S.R. Olive Green	7.00 – 9.50	7.00 – 9.50
631 S.R.	‡16.00	‡16.00
Black Oil	3.50 – 4.00	3.50 – 4.00
CHICAGO (Viscosity at 210°)		
Unfiltered Steam Refined:		
140	9.00	9.00
160	10.00	10.00
200	11.00	11.00
Bright stocks, 160 vis. at 210. No. 8 color:		
0 to 10 p.p.	20.75	20.75
15 to 25 p.p.	20.25	20.25
30 to 40 p.p.	19.75	19.75
E filtered Cyl. Stock	15.50	15.50

To obtain prices delivered in Chicago, add 0.25c per gal.

‡Only one refiner quoting.

Prices Effective	Aug. 9	Aug. 2
WESTERN PENNA.		
600 S.R. filterable	14.00 –14.50	14.00 –15.00
650 S.R.	16.50 –17.00	16.50 –17.50
600 fl.	17.50 –18.00	17.50 –18.50
630 fl.	21.50 –22.00	21.50 –22.50
600 Warren E	17.50 –18.00	17.50 –18.50
Bright stock, 145-155 vis. at 210°, 540-550 flash, No. 8 color:		
10 p.t.	24.00 –24.50	24.00 –26.00
15 p.t.	23.00 –23.50	23.00 –25.00
20 p.t.	22.00 –22.50	22.00 –24.00
25 p.t.	21.00 –21.50	21.00 –23.00

Petrolatums

WESTERN PENNA. (Per lb., in barrels, carload lots. In tank cars, 0.5c per lb. less).

Snow white	6.625– 6.75	6.625– 6.75
Lily White	5.625– 5.75	5.625– 5.75
Cream White	4.625– 4.75	4.625– 4.75
Light Amber	2.75 – 2.875	2.75 – 2.875
Amber	2.50 – 2.625	2.50 – 2.625
Red	2.125– 2.375	2.125– 2.375

Wax

Prices Effective	Aug. 9	Aug. 2
WESTERN PENNA. (Per lb., f.o.b. N. Y. basis)		
122-124 w.c. scale, A.m.p.	2.95 – 3.00	2.95 – 3.00
124-126 w.c. scale, A.m.p.	3.00	3.00
OKLAHOMA (Per lb. in bbls.; in a few instances, per lb. in burlap bags).		
124-126 w.c. scale, A.m.p.	3.00	3.00

CHICAGO (In bags, carload lots. Melting points are E.M.P. (A.S.T.M.) methods; add 3° F. to convert into A.m.p.)

Fully refined:		
122-124	4.65 – 4.75	4.65 – 4.75
125-127	4.90 – 5.00	4.90 – 5.00
127-129	5.05 – 5.15	5.05 – 5.15
130-132	**5.45 – 5.55	**5.45 – 5.55
132-134	**5.70 – 5.80	**5.70 – 5.80
135-137	**6.45 – 6.55	**6.45 – 6.55

**Same prices quoted in bags or slabs loose.

MID-WESTERN TANK CAR MARKET

Prices are those made by Chicago sellers, on Group 3 (Oklahoma) freight basis, although shipments may originate in other South-western or Mid-western refining districts

Gasoline

Prices Effective	Aug. 9	Aug. 2
U. S. Motor:		
62 oct. and below	4.75 – 5.00	5.00 – 5.25
63-67 oct.	5.25 – 5.625	5.25 – 5.625
68-70 oct. (regular)	5.625– 6.00	5.75 – 6.125
60-62, 400 e.p.	4.75 – 5.00	4.875– 5.00
64-66, 375 e.p.	5.125– 5.50	4.875– 5.25
68-70, 350-360 e.p.	5.00 – 5.50	‡5.50

Kerosine

41-43 w.w.	4.00 – 4.125	3.875– 4.125
42-44 w.w.	4.00 – 4.375	4.00 – 4.25

*Nominal

‡Only one seller quoting.

Fuel *and* Gas Oils

Prices Effective	Aug. 9	Aug. 2
Domestic:		
No. 1 p.w.	3.875– 4.00	3.75 – 3.875
No. 1 straw	3.625– 3.875	3.50 – 3.75
No. 2 straw	3.375– 3.625	3.375– 3.50
No. 2 dark	3.125– 3.375	3.25 – 3.375
No. 3	3.125– 3.25	3.125– 3.25
No. 4	$1.05 –$1.10	$1.05 –$1.15
No. 5	$0.80 –$0.85	$0.85 –$0.90
Industrial:		
No. 4	$0.95 –$1.10	$0.95 –$1.05
No. 5	$0.80 –$0.85	$0.75 –$0.85

Prices Effective	Aug. 9	Aug. 2
Industrial (cont'd)		
No. 6	$0.70 –$0.75	$0.70 –$0.80
U. G. I. gas oil	2.875– 3.25	3.00 – 3.25

Naphtha and Solvent

Stoddard solvent	6.875	6.875
Cleaners' naphtha	7.375	7.375
V. M. & P. naphtha	7.375	7.375
Mineral spirits	6.375	6.375
Rubber solvent	7.375	7.375
Lacquer diluent	8.375	8.375

DAILY GASOLINE PRICES

Daily range of gasoline prices as reported in PLATT'S OILGRAM, (Week Ended Aug. 6, 1937)

	Aug. 2	Aug. 3	Aug. 4	Aug. 5	Aug. 6
U. S. Motor, 62 oct. & below:					
*North Texas	5.125– 5.25	5.125– 5.25	5.125– 5.25	5.125– 5.25	5.125– 5.25
West Texas	5.125	5.125	5.125	5.125	5.125
Oklahoma	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
Mid-Western (Group 3 basis)	5.00 – 5.25	4.875– 5.00	4.875– 5.00	4.875– 5.00	4.875– 5.00
U. S. Motor, 63-67 oct.:					
*North Texas	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
West Texas	5.50	5.50	5.50	5.50	5.50
Oklahoma	5.375– 5.75	5.375– 5.75	5.375– 5.75	5.375– 5.75	5.375– 5.75
Mid-Western (Group 3 basis)	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625
U. S. Motor, 68-70 oct. (regular)					
*North Texas	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
West Texas	6.125	6.125	6.125	6.125	6.125
Oklahoma	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125
Mid-Western (Group 3 basis)	5.75 – 6.00	5.625– 6.00	5.625– 6.00	5.625– 6.00	5.625– 6.00
Motor Gasoline, 60-64 oct.					
New York harbor	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75
Philadelphia district	†7.50	†7.50	†7.50	†7.50	†7.50
Baltimore district	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75
Motor Gasoline, 65 oct. & above					
New York harbor††	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00
Philadelphia district	†7.75	†7.75	†7.75	†7.75	†7.75
Baltimore district	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00
U. S. Motor, 58-62°					
Bradford-Warren (Western Penna.)	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Other districts (Western Penna.)	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125
Motor Gasoline, Min. 60 oct.					
Bradford-Warren (Western Penna.)	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75
Other districts (Western Penna.)	7.375– 7.75	7.375– 7.75	7.375– 7.75	7.375– 7.75	7.375– 7.75
Motor Gasoline, Min. 65 oct.					
Bradford-Warren (Western Penna.)	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00
Other districts (Western Penna.)	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00

*For shipment to Texas and New Mexico destinations; Group 3 prices are quoted on northern shipment.

†Nominal.

TANK WAGON MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect Aug. 9, 1937, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. New Jersey

ESSOLENE

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
Atlantic City, N. J.	8	9.5	4	*	9
Newark, N. J.	8	9.5	4	*	9
Annapolis, Md.	9.1	10.6	5	*	9.5
Baltimore, Md.	8.5	10	5	18.5	9
Cumberland, Md.	9.9	12.4	5	*	10
Washington, D. C.	8	9.5	3	16	9.5
Danville, Va.	9.7	12.2	6	*	12.9
Norfolk, Va.	8.5	11	6	*	11.5
Petersburg, Va.	8.8	11.3	6	*	11.7
Richmond, Va.	8.8	11.3	6	*	11.7
Roanoke, Va.	10	12.5	6	*	12.9
Charleston, W. Va.	9.3	11.8	6	*	12.6
Parkersburg, W. Va.	8.6	11.1	6	*	11.2
Wheeling, W. Va.	9.5	11	6	*	12.2
Charlotte, N. C.	9.9	12.4	7	*	12.6
Hickory, N. C.	10.4	12.9	7	*	13
Mt. Airy, N. C.	10.2	12.7	7	*	12.8
Raleigh, N. C.	9.5	12	7	*	12.1
Salisbury, N. C.	10	12.5	7	*	12.7
Charleston, S. C.	8.5	11	7	*	11.1
Columbia, S. C.	9.5	12	7	*	12.1
Spartanburg, S. C.	10.2	12.7	7	*	12.9

*S. O. New Jersey transferred stations to dealers; no prices available.

Price basis to undivided dealers: Dealer t.w. price less 0.5c per gal.

Price basis to commercial consumers: To contract accounts, purchasing at least one full compartment at a time by hose connection: Effective March 12, 1937, in New Jersey, and March 8 in Maryland, District of Columbia, and in Arlington and Fairfax Counties in Virginia, on yearly purchases: from 2,500 to 100,000 gals., consumer t.w. price at time and place of delivery; 100,000 gals. per year, consumer tank car price, plus 0.5c per gal. Generally consumer t.w. price in foregoing states is equivalent of dealer t.w. price, less 0.5c per gal.

Effective May 15, 1937, on Essolene and Esso (by tank wagon) in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax Counties, which see above), commercial consumers taking deliveries of 50 gals. (West Va. 100 gals.) or more at one time will be billed at the posted consumer t.w. price. Deliveries less than 50 gals. (West Va. 100 gals.) will be billed at 4c per gal. over posted consumer t.w. price. Generally, posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.

Kerosine Discount: 1c off t.w. price for 25 gals or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey.

Socony-Vacuum Oil Co., Inc.

(S. O. New York Division)

SOCONY MOBILGAS

	Consumer Tank Car	"Split" Dealer T.W.	Taxes	Total "Split" Dealer T.W.	Kerosine T.W.
Metropolitan N. Y. City: Boroughs of Manhattan, Bronx and Brooklyn (Kings and Queens)	8.5	10	*5	15	9
Borough of Richmond (Staten Is.)	8.5	10	*5	15	9
Albany, N. Y.	8.5	10	5	15	9
Binghamton, N. Y.	9.7	10.8	5	15.8	9.5
Buffalo, N. Y.	9.04	10.8	5	15.8	8.5
Jamestown, N. Y.	8.28	10.8	5	15.8	8.25
Plattsburg, N. Y.	8.9	10.9	5	15.9	9.5
Rochester, N. Y.	8.92	10.3	5	15.3	8.5
Syracuse, N. Y.	9.1	10.5	5	15.5	9
Danbury, Conn.	8.8	10.3	4	14.3	9
Hartford, Conn.	8.6	10.6	4	14.6	9
New Haven, Conn.	8.5	10	4	14	9
Bangor, Me.	9.1	11.3	5	16.3	9.5
Portland, Me.	8.5	10.8	5	15.8	8.75
Boston, Mass.	8.5	9.5	4	13.5	8.5
Concord, N. H.	9.2	11.8	5	16.8	9.5
Lancaster, N. H.	10.1	12.8	5	17.8	10.25
Manchester, N. H.	9	11.3	5	16.3	9.5
Providence, R. I.	8.5	10	4	14	8.25
Burlington, Vt.	8.9	10.9	5	15.9	9.5
Rutland, Vt.	9.2	11.2	5	16.2	9.75

*Plus 2% city sales tax computed at time of each sale.

Note: Socony-Vacuum has transferred all service stations to dealers; no prices available.

Price basis to undivided dealers: 0.5c less than "split" dealer t.w.

Price basis to commercial consumers: Effective about Nov. 15, 1936 in New York and New England, for tank wagon delivery: monthly purchases of 25,000 gals. or over, pay consumer tank car price at point of delivery, plus 0.5c gal.; monthly purchases of 5,000 to 25,000 gals., pay undivided dealer tank wagon price at point of delivery; monthly purchases of less than 5,000 gals., pay divided dealer tank wagon price at point of delivery. Private consumers pay undivided dealer tank wagon price at point of delivery, plus 2c gal.

Atlantic Refining

ATLANTIC WHITE FLASH GASOLINE

	Commercial Tank Car	All Tax	Total Dealer T.W.	S.S.	Kerosine T.W.
Philadelphia, Pa.	8	5	14.5	18	10.5
Pittsburgh	8.5	5	15.5	20	11
Allentown	8.5	5	15	**	11
Erie	8	5	14.5	**	10
Scranton	8.5	5	15	**	11
Altoona	8.5	5	15.5	**	11
Harrisburg	8.5	5	15	**	11
Williamsport	8.5	5	15.5	**	11
Dover, Del	...	5	14.5	**	11
Wilmington	...	5	14	**	11
Boston, Mass	...	4	14	**	8.5
Springfield, Mass	...	4	14.8	**	9
Worcester, Mass	...	4	14.8	**	9
Fall River, Mass	...	4	13	**	8.5
Hartford, Conn	...	4	14.6	**	9
New Haven, Conn	...	4	14	**	9
Providence, R. I.	...	4	14	**	8.5
Atlantic City, N. J.	...	4	13.5	**	8.5
Camden, N. J.	...	4	13.5	**	8.5
Trenton, N. J.	...	4	13.5	**	8.5
Annapolis, Md	...	5	15.6	**	9.5
Baltimore, Md	...	5	15	**	9
Hagerstown, Md	...	5	16	**	10
Richmond, Va.	...	6	17.3	**	11.7
Wilmington, N. C.	...	7	18.1	**	11.3
Brunswick, Ga	...	7	16	**	*13
Jacksonville, Fla.	...	8	17.5	**	11

*Georgia has kerosine tax of 1c per gal., not included in above price.

**Atlantic Refining transferred stations to dealers; no prices available.

Price basis to undivided dealers: Dealer t.w. less 0.5c per gal.

Price basis to commercial consumers: in Penna. and Delaware, effective Mar. 11, 1937, on yearly gasoline purchases to contract accounts taking full compartment hose deliveries, using 100,000 gals. or more per year, tank car price plus 0.5c per gal.; consumers taking less than 100,000 gals., undivided dealer price. Consumers under contract and not under contract, taking less than full compartment delivery, and consumers not under contract taking full compartment delivery, get divided dealer price. Consumers taking less than 25 gals., t.w delivery, get 4c above undivided dealer price.

Discount on kerosine: Effective Oct. 29, 1936, in Pennsylvania and Delaware, 2c per gal. off t.w. price on t.w. deliveries of 25 gals. or more at one time.

S. O. Ohio

SOHIO X-70 GASOLINE

	All Tax	**Commercial Consumer T.W.	†Divided Dlr.	Kerosine T.W.
Ohio State-Wide	5	17	15.5	16	*13.5
Defiance county	5	16	‡	15	....
Erie, Fulton, Hamilton, Henry, Lucas, Ottawa, Sandusky, Williams & Wood counties	5	17	‡	16	....
Counties where prices are below statewide:					
Columbiana	5	16.5	15	15.5	....
Franklin, Knox and Pickaway	5	16	14.5	15	....
Paulding	5	15.5	14	14.5	....

RENOWN GASOLINE (Third Grade)

Ohio State-Wide	5	16.5	15	15.5	....
Defiance county	5	15.5	‡	14.5	....
Erie, Fulton, Lucas, Ottawa, Sandusky, Williams and Wood	5	16.5	‡	15.5	....
Hamilton county	5	17	‡	16	....
Counties where prices are below statewide:					
Columbiana	5	16	14.5	15	....
Franklin, Knox, and Pickaway	5	15.5	14	14.5	....
Paulding	5	15	13.5	14	....
Counties where prices are above statewide: Butler, Clermont, Darke, Greene, Hocking, Miami, Montgomery, Preble and Warren	5	17	15.5	16	....

S. O. Ohio Cont'd

KEROSINE PRICES

(Off Statewide Level)

Kerosine prices are off statewide level in the following counties:

Gallia and Washington *13

Allen, Auglaize, Champaign, Columbiana, Darke, Geauga, Greene, Hancock, Hardin, Logan, Mahoning, Mercer, Preble, Putnam, Shelby, Trumbull, Union, Van Wert and Wyandot: *12.5

Paulding *12

Ashtabula *11.5

Fayette, Licking, Madison, Pickaway, Portage and Summit ..... * 9.5

*Kerosine prices include 1c state tax.

**Tank wagon price to commercial consumers, in t.w. deliveries of 25 gals. or more; less than 25-gal. deliveries get s.s. price. Price to undivided dealers is same as to commercial consumers.

‡Commercial consumer t.w. posted price discont'd and Q.D.A. to t.w. consumers put into effect July 19, 1937, in counties of Defiance, Erie, Fulton, Hamilton, Henry, Lucas, Ottawa, Sandusky, Williams and Wood. For further information, write National Petroleum News.

†This price also to authorized agents, exclusive of 0.5c rental.

Sales tax: Ohio's 3% sales tax, effective Jan. 27, 1935, is added "where assessable, to regular posted prices", S. O. Ohio says.

On kerosine, prices to resellers and commercial consumers are posted generally at 3c per gal. below consumer t.w. price in any quantity, when such prices are on state-wide level.

S. O. Kentucky

CROWN GASOLINE

(Regular Grade)

	Consumer T.W.	All Tax	Total Consumer T.W.	Net Dlr.	Kerosine T.W.
Covington, Ky.	13.5	6	19.5	16.5	11
Lexington, Ky.	14	6	20	17	11
Louisville, Ky.	14	6	20	17	10.5
Paducah, Ky.	14	6	20	17	8
Jackson, Miss.	14	7	21	18	*13
Vicksburg, Miss.	13.5	7	20.5	17.5	*13
Birmingham, Ala.	11.5	*8	19.5	16.5	12
Mobile, Ala.	13	*9	22	19	11
Montgomery, Ala.	13	*9	22	19	*14.5
Atlanta, Ga.	15	7	22	19	*13
Augusta, Ga.	14	7	21	18	*14
Macon, Ga.	14.5	7	21.5	18.5	*14.5
Savannah, Ga.	12	7	19	16	*12
Jacksonville, Fla.	12.5	8	20.5	17.5	11
Miami, Fla.	12.5	8	20.5	17.5	11.5
Pensacola, Fla.	13	*9	22	19	12
Tampa, Fla.	11	8	19	16	10.5

KYSO GASOLINE

(Third Grade)

Covington, Ky.	12	6	18	15.5	....
Lexington, Ky.	12.5	6	18.5	16	....
Louisville, Ky.	12	6	18	15.5	....
Paducah, Ky.	12	6	18	15.5	....
Jackson, Miss.	12.5	7	19.5	17	....
Vicksburg, Miss.	12	7	19	16.5	....
Birmingham, Ala.	10	*8	18	15.5	....
Mobile, Ala.	10.5	*9	19.5	17	....
Montgomery, Ala.	10.5	*9	19.5	17	....
Atlanta, Ga.	13	7	20	17.5	....
Augusta, Ga.	12	7	19	16.5	....
Macon, Ga.	10.5	7	17.5	15	....
Savannah, Ga.	10.5	7	17.5	15	....
Pensacola, Fla.	11	*9	20	17.5	....

Discounts to tank wagon consumers: Effective Jan. 4, 1937, thru territory, on Crown gasoline, 3c per gal. below consumer t.w. price; on Kyso, 2.5c below.

Discounts on kerosine: Prices in Kentucky are net, but in other states subject to 2c discount.

**Taxes*: in the tax column is included these city and county gasoline taxes at the following points: Mobile, 2c city; Birmingham, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Mississippi kerosine prices include 1c state tax. Montgomery kerosine price includes 1c city tax.

S. O. Indiana

	Tax	Red Crown Total T.W.	Dealer Prices Red Crown	Stanolind	Kerosine T.W.
Chicago, Ill.	4	15.5	13.5	12	10.1
Decatur, Ill.	4	15.5	14	12	10.1
Joliet, Ill.	4	15.5	14	13.5	10.1
Peoria, Ill.	4	15.5	14	13.5	10.1
Quincy, Ill.	4	15.3	13.8	13.3	7.6
Indianapolis, Ind.	5	17.2	15.7	14.7	*13.6
Evansville, Ind.	5	17	15.5	13	*14.6
South Bend, Ind.	5	17.4	15.9	15.4	*13.6

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel:

Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/2c per gal. in a single barrel; 3/10c per gal. in lots of 2 to 10 bbls., 1/5c for 10 to 50 bbls., 2/25c for over 50 bbls.; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline, 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal., in lots of more than 50 bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 1/25c.

Kerosine inspection fee only: Iowa, 2/25c; Michigan, 4/5c per gal. for first 2 bbls.; 3/5c for next 3; 2/5c for next 5; 3/10c for next 15, and 1/5c per gal. in lots over 25 bbls.

TANK WAGON MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect Aug. 9, 1937, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. Indiana Cont'd

	Red Crown Tax	Dealer Prices Total T.W.	Red Crown	Stanolind	Kerosine T.W.
Detroit, Mich	4	15.4	13.9	13.4	9.8
Grand Rapids, Mich	4	16.5	15	14.5	10.9
Saginaw, Mich	4	16.3	14.8	14.3	8.5
Green Bay, Wis	5	17.2	15.7	14.7	8.6
Milwaukee, Wis	5	16.8	15.3	14.2	10.4
La Crosse, Wis	5	16.9	15.4	14.9	10.5
Minneapolis-St. Paul	5	16.9	15.4	14.9	10.5
Duluth, Minn	5	17.3	15.8	15.3	10.9
Mankato, Minn	5	16.9	15.4	14.9	10.5
Des Moines, Ia	4	15.3	13.8	13	*12.9
Sioux City, Ia	4	15.5	14	13.5	*13.1
Davenport, Ia	4	15.5	14	13.5	*13.1
Mason City, Ia	4	15.7	14.2	13.7	*13.3
St. Louis, Mo	*4	15.2	13.7	11.2	9.8
Kansas City, Mo	*4	14.9	13.4	12.9	8
St. Joseph, Mo	*4	14.9	13.4	12.9	7.4
Fargo, N. D.	4	16.9	15.4	14.9	11.5
Minot, N. D.	4	18.1	16.6	16.1	12.7
Huron, S. D.	*5	17.3	15.8	15.3	*10.9
Wichita, Kans	4	14.4	12.9	12.4	8

*Taxes: in the tax column is included these city and state gasoline taxes at following points: Kansas City, St. Joseph and St. Louis, 1c city tax; South Dakota, 0.1c sales tax. State Kerosine taxes: Indiana, 4c; Iowa, 3c, all included in above prices.

Discount to commercial consumers: Effective Jan. 1, 1935, thru territory, except Michigan effective Feb. 1, on purchases per month, discount off t.w. prices; all gasolines, 25 to 1,000 gals., at t.w. price; 1,000 gals., or more, 1.5c off t.w. on Ethyl and Red Crown, and 1c on Stanolind (latter effective June 9, 1937). Minimum delivery is 25 gals.

S. O. Nebraska

STANDARD RED CROWN GASOLINE

	All Tax	T.W. Total	Dealer Total	Kerosine T.W.
Omaha, Neb	6	17.9	16.4	10.4
McCook	6	18.6	17.1	11.1
Norfolk	6	18.3	16.8	10.8
North Platte	6	18.7	17.2	11.2
Scottsbluff	6	19.4	17.9	11.9

Discounts to commercial consumers: for tank wagon deliveries covered only by Standard Commercial Consumer Contract, effective January 1, 1935.

S. O. Louisiana

ESSOLENE

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
Little Rock, Ark	8.5	11	7.5	**	11.5
Alexandria, La	8.5	11	8	**	*12
Baton Rouge, La	8	10.5	8	22	*12
New Orleans, La	8	10.5	*10	24	*13
Lake Charles, La	9	11.5	8	**	*12.5
Shreveport, La	7.5	10	8	**	*9.5
Lafayette, La	9	11.5	8	**	*13
Bristol, Tenn	11	12.25	8	**	14.5
Chattanooga, Tenn	10.5	13	8	**	13.5
Knoxville, Tenn	11	13.5	8	**	14
Memphis, Tenn	9	11.5	8	**	12
Nashville, Tenn	10	12.5	8	**	11

*New Orleans gasoline tax includes 7c state, 1c federal, and 2c parish tax. Louisiana kerosine prices include 1c state tax; in addition New Orleans has 1c parish tax.

**S. O. Louisiana transferred stations to dealers; no prices available.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Price basis to commercial consumers: Effective May 15, 1937, thru territory; commercial consumers taking 50 gals. or more at one time will be billed at posted consumer t.w. price; those taking less than 50 gals. at one time will be billed at 4c per gal. over posted consumer t.w. price. Generally, the posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.

Humble Oil & Refining Co.

HUMBLE MOTOR FUEL

	*100% Dlr. T.W.	Total *100% Dlr. Taxes	T.W.	S.S.	Kerosine T.W.
Dallas, Tex	8.5	5	13.5	17	8
Ft. Worth, Tex	9	5	14	18	8
Houston, Tex	9.5	5	14.5	18.5	8
San Antonio, Tex	9.5	5	14.5	18.5	8
(Third Grade)					
Dallas, Tex	7	5	12	14	
Ft. Worth, Tex	8	5	13	16	
Houston, Tex	8.5	5	13.5	16.5	
San Antonio, Tex	8.5	5	13.5	16.5	

*Price is t.w. price to contract dealers and commercial consumers. Price to open dealers is 0.5c above t.w. prices shown above.

Price basis to dealers: to contract dealers consumer accounts off posted retail price: when posted retail price, including all taxes on Esso motor fuel is: 19.1c per gal. and above discount is 4c; 19c to 18.1c, 3.5c, and 18c and below, 3c. Humble motor fuel, 17.1c and above, 4c; 17 to 16.1c, 3.5c; and 16c and below, 3c; U. S. motor fuel. 15.1c and above, 3c; 15 to 14.1c, 2.5c; and 14c and below, 2c. To "open" dealer accounts, discounts in each case are 0.5c less on the same price basis.

Continental Oil

	Conoco Bronze Ex-Tax	Dealer Prices All Tax	Total Conoco Bronze	Demand	Kerosine T.W.
Denver, Colo	12.5	5	17.5	16.5	11.5
Grand Junc., Colo	15	5	20	19	15
Pueblo, Colo	11	5	16	15	10.5
Casper, Wyo	13	5	18	17	11.5
Cheyenne, Wyo	13	5	18	17	13
Billings, Mont	14	6	20	18	15.5
Butte, Mont	13.5	6	19.5	16.5	15.5
Great Falls, Mont	15.5	6	21.5	20.5	15.5
Helena, Mont	15.5	6	21.5	20.5	15.5
Salt Lake City, Utah	14.5	5	19.5	16.5	16
Boise, Ida	15.5	6	21.5	20.5	18
Twin Falls, Ida	15.5	6	21.5	20.5	18
Albuquerque, N. M.	11	†6.5	17.5	16.5	12
Roswell, N. M.	12	†6.5	18.5	15	10.5
Santa Fe, N. M.	13	*7	20	16.5	12
Muskogee, Okla	10	5	15	13	7
Oklahoma City, Okla	9	5	14	11	8
Tulsa Okla	9	5	14	13	7
Ft. Smith, Ark	10.5	5	15.5	14.5	10
Little Rock, Ark	10.5	7.5	18	16	9.5
Texarkana, Ark	10.5	5	15.5	13.5	9

†Includes city tax of 0.5c.
*Includes 1c city tax.

S. O. California

STANDARD GASOLINE

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
San Francisco, Cal	13.5	4	17.5	18.5	11.5
Los Angeles, Cal	13	4	17	18	9
Fresno, Cal	14.5	4	18.5	19.5	12
Phoenix, Ariz	15	6	21	22	†16
Reno, Nev	15	5	20	21	13
Portland, Ore	14	6	20	21	13.5
Seattle, Wash	14	6	20	21	13.5
Spokane, Wash	17	6	23	24	16.5
Tacoma, Wash	14	6	20	21	13.5

FLIGHT GASOLINE
(Third Grade)

San Francisco, Cal	12	4	16	17	....
Los Angeles, Cal	11.5	4	15.5	16.5	....
Fresno, Cal	13	4	17	18	....
Reno, Nev	13.5	5	18.5	19.5	....
Phoenix, Ariz	13.5	6	19.5	20.5	....
Portland, Ore	12.5	6	18.5	19.5	....
Seattle, Wash	12.5	6	18.5	19.5	....
Spokane, Wash	15.5	6	21.5	22.5	....
Tacoma, Wash	12.5	6	18.5	19.5	....

†Includes 5c state tax.

Discount to dealers: on gasoline, off t.w. price on Standard Ethyl and Standard Gasoline, to 100% dealers, 3c; to split dealers, 2c; on Flight gasoline, both 100% and split dealers, 2c.

On Stanavo Aviation Gasoline, to all classes of dealers, 3c off t.w.

To commercial consumers: off tank wagon price: on single deliveries of 40 gallons and over, Stanavo Aviation, Standard Ethyl and Standard Gasolines, 3c. Flight Gasoline, 2c per gallon. Tank wagon delivery, less than 40 gals., 1c per gal. above posted t.w. price.

On kerosine in tank car, transport truck and trailer delivery, 3c off t.w. price; plant deliveries to jobbers, 2.5c below t.w.

Canada

PRICES OF IMPERIAL OIL LTD.

Per Imperial Gallon, which is 1.2 U. S. Gallons

3-STAR IMPERIAL GASOLINE

	T.W.	Taxes	Total T.W.	Kerosine T.W.
Hamilton, Ont	16	6	22	17
Toronto, Ont	16	6	22	17
Brandon, Man	22.8	7	29.8	22.3
Winnipeg, Man	21.2	7	28.2	20.7
Regina, Sask	22.5	7	29.5	22
Saskatoon, Sask	25.3	7	32.3	24.8
Edmonton, Alta	23.5	7	30.5	24.2
Calgary, Alta	21	7	28	21.5
Vancouver, B. C.	16	7	23	23
Montreal, Que	15	6	21	17.5
St. John, N. B.	16	8	24	18.5
Halifax, N. S.	16	8	24	18.5

Note: Imperial Oil Ltd. has completed transfer of service stations to dealers; no s.s. prices available.

Discounts to undivided dealers, 1c off t.w. price, except Maritime Provinces where undivided dealers pay t.w. price. Divided dealers pay t.w. price, thru territory.

Aviation Gasoline

Following are tank car and/or tank wagon prices of aviation gasoline in principal marketing territories (Stanavo aviation in all territories except Continental Oil and unless otherwise noted). Tax column includes 1c federal tax, and state tax; also municipal taxes as indicated in footnotes.

S. O. NEW JERSEY

	*Ethyl T.C.	Tank Car	T.W.
Bayonne, N. J.	15.5	9.5	12.5
Baltimore, Md	14.5	10	12.5
Washington, D. C.	....	....	13.1
Richmond, Va	....	....	15.2
Greensboro, N. C.	....	....	15.7
Raleigh, N. C.	....	....	17.1
Charleston, W. Va	....	....	15.2

*This is Stanavo Ethyl Aviation Gasoline, 100 octane number, tank car price.

COLONIAL BEACON OIL CO.

	T.W.
Brooklyn, N. Y.	12.8
Buffalo, N. Y.	14.1
Boston, Mass	15

S. O. PENNSYLVANIA

Philadelphia, Pa	12.8
Pittsburgh, Pa	13.1

S. O. LOUISIANA

New Orleans, La	13.8
Shreveport, La	14.1

Prices in above four territories do not include state or federal taxes. They are for 74 octane grade aviation gasoline except where otherwise noted. An 80 octane product generally brings 0.5c premium and an 87 octane product, 1.5c premium over the 74 octane grade.

Note: S.s. prices in above four territories are generally 6c over t.w. prices. Above t.w. prices are net, with no discounts allowed for quantity purchases. T.w. prices are generally tank car price, plus freight, plus 2.5c per gal.

S. O. OHIO
Thru Ohio

	Consumer T.W.	Tax	Total Consumer T.W.
Stanavo Ethy Aviation:			
73 octane	15.5	5	20.5
80 octane	16.5	5	21.5
87 octane	17.5	5	22.5

Discounts: For delivery on contract to hangar operators and resellers: 2c below commercial consumer posted t.w. price, shown above.

S. O. INDIANA

Chicago, Ill	15	4	19
Detroit, Mich	16.2	4	20.2
Milwaukee, Wisc	15.3	5	20.3
Minneapolis, Minn	15.4	5	20.4
St. Louis, Mo	14.7	*3	17.7
Kansas City, Mo	14.4	*4	18.4
Fargo, N. D.	16.4	4	20.4
Huron, S. D.	15.8	5	20.8

*Includes 1c city tax.
**Includes 0.1c to cover.

HUMBLE OIL & REFINING CO.

	Tank Car
Baytown, Tex. (exclusive of taxes)	8.5

CONTINENTAL OIL CO.

	Dealer	Tax	Total Dealer
Denver, Colo	15.5	5	20.5
Cheyenne, Wyo	16	5	21
Helena, Mont	18.5	6	24.5
Salt Lake City, Utah	17.5	5	22.5
Albuquerque, N. M	14	*6.5	20.5

*Includes city tax of 0.5c.

S. O. CALIFORNIA

Phoenix, Ariz	17	6	23
Los Angeles, Cal	15	4	19
San Francisco, Cal	15.5	4	19.5
Reno, Nev	17	5	22
Portland, Ore	16	6	22
Seattle, Wash	16	6	22
Spokane, Wash	19	6	25

Note: For discounts, etc., see note under Standard and Flight gasoline above.

TANK WAGON MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect Aug. 9, 1937, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

Naphtha (In Tank Wagon)

S. O. NEW JERSEY

Posted Tank Wagon Prices

	Mineral Spirits	V.M.&P.
Newark, N. J.	13.5	15.5
Baltimore, Md.	15.5	....
Washington, D. C.	15	....

Discounts: Buyers taking following quantities, at one time, get these discounts: Newark, 2c per gal. on 200 gals. or more; less than 200 gals., 0.5c higher price. Baltimore 2c off on 25 to 100 gals. and 3c on over 100 gals. Washington, 2c off to contract buyers.

SOCONY-VACUUM OIL CO.

Buffalo, N. Y.	13	14
New York City	11	12
Rochester, N. Y.	12	15
Syracuse, N. Y.	14	15
Boston, Mass.	13.5	14
Bridgeport, Conn.	13.5	14
Hartford, Conn.	13	13.5
Providence, R. I.	13.5	14.5

ATLANTIC REFINING CO.

Philadelphia, Pa.	11.5	12.5
Lancaster, Pa.	13	14
Pittsburgh, Pa.	12.5	14.5

Note: Prices for Mineral Spirits also apply to Stoddard Solvent; and prices for V.M.&P. Naphtha apply also to Light Cleaners Naphtha.

S. O. OHIO

	S.R. Solvent	V.M.&P. Naphtha
Thru Ohio	13.25	13.75

Note: V.M.&P. Naphtha prices also apply on Dry Cleaners naphtha and special Varnolene; Varnolene and Sohio Solvent 0.5c below these prices. Discounts to contract consumers, off t.w. price: 300 to 999 gals., 0.5c; 1,000 to 2,499 gals., 0.75c; 2,500 to 4,999 gals., 1c; 5,000 or more gals., 1.5c.

S. O. INDIANA

(Prices include state and federal taxes)

	Oleum Spirits	V.M.&P. Naphtha	Staniso
Chicago, Ill.	15.8	16.1	15.5
Detroit, Mich.	19.2	18.2	19.3
Kansas City, Mo.	14.4	15.4	14.4
St. Louis, Mo.	14.7	15.7	14.6
Milwaukee, Wis.	19.3	20.3	19.3
Minneapolis, Minn.	19.4	20.4	18

Note: Prices for V. M. & P. apply also to Light Cleaners Naphtha. All prices, with exception of Missouri points, include state tax. Prices shown are base prices, before discounts.

Naphtha (In Tank Cars)

In Tank Cars (F. o. b. refinery or seaboard terminal except Ohio, delivered price.)

	V.M.&P. Naphtha	Solvent
Baltimore	11	10
New York Harbor	11	10
Philadelphia district	11	10
Boston	10.5	10
Providence	10.5	10
Ohio points, delivered	9.75	*9.25

*This is on S.R. solvent.

Note: In Ohio, prices on D.C. naphtha and special Varnolene are same as V.M.&P.; on Varnolene and Sohio Solvent, prices are 0.5c less than on V.M.&P.

Latest Changes

From Aug. 3 to Aug. 9 inclusive. Dates and amounts of changes shown. See table for full current prices.

Socony-Vacuum Oil—Mobilgas:
Dealer t.w. cut 0.5c, Boston, Aug. 7.

S. O. Indiana—Stanolind, Kerosine, Tractor Fuel:
Consumer t. w. restored to normal, thru Illinois, Indiana, and eastern Missouri, at points where prices were subnormal, with some exceptions, Aug. 9. Dealer prices unchanged. None of the points published in N.P.N. tables were affected.

S. O. Nebraska—All Gasolines, Kerosine, Tractor Fuel:
T. w., dealer price, and company-operated s. s. prices restored to normal, thru Nebraska, Aug. 4. Points affected were McCook, t. w. only up 0.6c, kerosine up 1.1c; and Scottsbluff, dealer price up 2c, kerosine up 1c.

Corrections

Notation of amount of change and dates not previously shown in table. Table in this issue is corrected to show these changes.

Socony-Vacuum Oil—Mobilgas:
In Aug. 4 issue, page 56, name of city with 0.37c and 0.5c advance, July 29, was omitted. It was Buffalo.

S. O. Indiana—Kerosine:
Cut 0.9c, Kansas City, to 8c, July 29, instead of up 0.5c, to 9.4c, as company first reported.
Up 0.5c, St. Joseph, July 29.
Up 0.5c, Wichita, July 29.

Eastern

(*Continued from page* 60)

reduction by "competitive" conditions.

Suppliers at New York harbor reported a good demand for gasoline, mostly from contract customers and said that, where an open market buyer needed gasoline, they had "no trouble" in getting 7.50 cents for barge lots of 65 octane and above. Gasoline was moving to distributors buying on contracts at under the spot market level, according to trade reports.

"Under-canopy discounts" were reported practically eliminated in the Philadelphia market since state's anti-discount law went into effect. However, some stations were reported to be selling regular "branded" gasolines at the same level as the so-called "unbranded" group—two cents a gallon below the "normal" service station price of 18 cents, including taxes.

Russian Oil Exports

WASHINGTON, Aug. 9.—Exports of Russian petroleum products through Black Sea ports—which represent 80 to 85 per cent of all Russia's petroleum exports—declined sharply during the first half of 1937, as compared with the same period in 1936, according to information received by the Commerce Department from Istanbul.

Fuel oil exports through the Black Sea dropped from 4,411,500 barrels in the first half of 1936 to 3,187,000 barrels in the same period of this year. Gasoline exports likewise dropped from 2,917,500 barrels to 2,200,200 during the same period.

Wintergust Joins Gulf

PITTSBURGH, Aug. 5. — A special automobile racing representative has been appointed by the Gulf Oil Corp. He is Edward F. ("Big Ed") Wintergust, one of the best known racing drivers of the past 17 years.

Mr. Wintergust's duties, according to H. P. Hobart, general manager of lubricating oil sales, will be to keep in contact with racing events and individuals engaged in racing, and to promote the use of Gulf products at all major races and record-making runs operating under the sanction of the American Automobile Assn.

June Exports

WASHINGTON, Aug. 9.—Exports of petroleum products from the U. S. in June totaled $32,954,987, compared with imports of $3,858,339, according to the Bureau of Foreign and Domestic Commerce.

Chief export was crude petroleum, both in volume and value, with 6,180,540 barrels exported, valued at $9,172,875. Gasoline exports amounted to 2,393,249 barrels, valued at $6,528,961, the Bureau reports. Exports of lubricating oil, including red and pale, black, and cylinder oil, were valued at $6,755,503, and kerosine exports amounted to 617,624 barrels, worth $1,392,278.

On the import side, imports of crude oil for consumption totaled 2,460,659 barrels, valued at $1,888,776, and crude entered for bonded warehouse was 174,076 barrels, valued at $100,965.

Oil Earnings Up

NEW YORK, Aug. 7.—Aggregate net income of 14 oil companies which have reported earnings for the first six months of 1937, amounted to $82,519,335 as compared to $54,921,434 in the similar period of 1936, according to the monthly report of Carl H. Pforcheimer & Co.

Total net profit for the second quarter, of companies issuing quarterly statements represented a 40 per cent increase over the June quarter of 1936, the report stated. First quarter 1937 earnings of these companies were about 70 per cent over the first quarter of last year.

Pa. Refinery Lubricating Oil Inventory

(Issued as of July 29 by National Petroleum Assoc.)

	Gallons
1. **Raw Long Residuum** (Including all raw long residuum below, and not salable, as 600 fire	2,041,001
2. **600 Steam Refined** (Includes all steam refined stock commonly sold or used as 600 and as raw material for bright stocks)	9,503,396
3. **Other Steam Refined** (Not included in 1 and 2, above)	3,883,972
4. **Finished Dewaxed Long Res.**	2,512,758
5. **Bright Stock** (Does not include any material reported in 4, above)	13,406,327
6. **Viscous Neutral**, below 180 vis. but not below 142 vis. @ 100	8,741,271
7. **Viscous Neutral**, 180 vis. @ 100 and above	7,311,782

SEABOARD MARKETS, EXPORT AND COASTWISE

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). In cargo markets, spot shipment is 90 days. Prices in cents per gallon, except heavy fuel oil in dollars per barrel, in tank car lots, f.o.b. refineries or seaboard terminals in districts designated, unless otherwise noted. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Eastern Domestic

(Inter-refinery and export prices not included.)

MOTOR GASOLINE

Prices Effective	Aug. 9	
District:	*60-64 Oct.	*65 Oct. & Above
N. Y. harbor	7.50 – 7.75	7.75 – 8.00
†N. Y. harbor	7.25 – 7.50	7.50 – 7.75
Philadelphia	7.50	7.75
Baltimore	7.50 – 7.75	7.75 – 8.00
Norfolk	7.50 – 7.75	7.75 – 8.00
Wilmington, N. C.	7.50 – 7.75	7.75 – 8.00
Charleston, S. C.	7.50 – 7.75	7.75 – 8.00
Savannah	7.25	7.50
Jacksonville	7.25	7.50
Portland	7.75	8.00
Boston	7.25 – 7.50	7.50 – 7.75
Providence	7.50	7.75 – 8.00

*Prices are nominal. †Barge lots.

WATER WHITE KEROSINE

District:			
N. Y. harbor	6.30	Charleston, S. C.	6.25
*N. Y. harb or	6.125	Savannah	6.25
Philadelphia	6.25	Jacksonville	6.25
Baltimore	6.25	Portland	6.75
Norfolk	6.25	Boston	6.40
Wilmington, N. C.	6.25	Providence	6.30 – 6.40

*Barge lots.

†FUEL OILS

	N. Y. harb.	N. Y. harb. barges
No. 1	6.30	6.125
Nos. 2-3	5.25	5.125
No. 4	5.25	5.125
No. 5	$1.55 –$1.60	.....
No. 6	$1.35 –$1.40	.....

	Phila. dist.	Balt. dist.
No. 1	6.25	6.25
Nos. 2-3	5.00	5.25
No. 4	4.75 – 5.00	5.25
No. 5	$1.47 –$1.55	$1.55
No. 6	$1.30 –$1.35	$1.35

	Bost. dist.	Prov. dist.
No. 1	6.40	6.30 – 6.40
Nos. 2-3	5.40	5.30 – 5.40
No. 4	5.25 – 5.40	5.25 – 5.40
No. 5	$1.55 –$1.60	.....
No. 6	$1.35	.....

†Fuel oils meet specifications of U. S. Commercial Standards CS12-35.

District:	†Bunker C Fuel	†Diesel Oil
N. Y. harbor	*$1.35	**$2.20
Philadelphia	*$1.30 –$1.35	*$2.20
Baltimore	*$1.35	**$2.20
Norfolk	*$1.35	$2.20
Charleston	$1.30	$2.20
Savannah	*$1.30	$2.20
Jacksonville	*$1.30	$2.20
Tampa	*$1.30	$2.20
Portland	$1.45	$2.35
Boston	*$1.35	**$2.25
Providence	$1.35	$2.25

†In ships' bunkers.

	Gas Oil 28-34 Gravity	Diesel Oil Shore Plants
N. Y. harbor	5.25	5.25
Philadelphia dist.	5.00	....
Baltimore dist.	5.25	....
Norfolk dist.	5.25	....
Savannah dist.	....	5.25
Jacksonville dist.	....	5.25

*For barging add 5c per bbl.
**For barging add 6.5c per bbl.

Pacific Export

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gal., except where otherwise noted.)

Prices Effective	Aug. 9	Aug. 2
U. S. Motor, under 65 oct.	6.00 – 6.125	5.875– 6.00
400 e.p. blend 65 oct. & above	6.125– 6.25	6.00 – 6.125
*38-40 w.w. kerosine	4.50 – 4.75	4.50 – 4.75
41-43 w.w. kerosine	4.75 – 5.00	4.75 – 5.00
44 w.w. kerosine	5.00	5.00

*150 fire point.

Prices Effective	Aug. 9	Aug. 2
In Cargo lots, per bbl.		
Diesel fuel, 24° & above	$1.15 –$1.26	$1.15 –$1.26
Diesel fuel, under 24°	$1.10 –$1.15	$1.10 –$1.15
*30-34 diesel (gas oil)	$1.30 –$1.40	$1.30 –$1.40
†Grade C fuel oil	$0.85 –$1.05	$0.85 –$1.05

Note: For San Francisco cargo prices, add 5c per bbl. to above cargo prices.

In Ships' Bunkers, or deep tank lots, per bbl.:		
*Diesel fuel oil	$1.625–$1.65	$1.625–$1.65
†Grade C fuel oil	$1.075–$1.10	$1.075–$1.10
Cased Goods: (Per case)		
U. S. Motor	$1.40 –$1.525	$1.40 –$1.525
400 e.p. blend, 65 oct. & above	$1.50 –$1.625	$1.50 –$1.625
*40-43 w.w. kerosine	$1.25 –$1.325	$1.25 –$1.325
Kerosine, p.w.	$1.20 –$1.30	$1.20 –$1.30

*150 fire point.

New York Export

(Prices in cents per gal. in bbls. F.a.s. New York)

CYLINDER OILS (Pennsylvania Products)

Bright stock:			
Light, 25 p.t.	28.50 –29.00	28.50 –29.50	
Dark, 25 p.t.	28.00 –28.50	28.00 –29.00	
Neutral oil:			
200 3 color, 25 p.t.	32.00 –32.50	32.00 –33.00	
150 3 color, 25 p.t.	27.50 –28.00	27.50 –28.50	
600 Warren E filtered	25.00 –25.50	25.00 –26.00	
600 s.r., unfiltered	21.50 –22.00	21.50 –22.50	
650 s.r., unfiltered	24.00 –24.50	24.00 –25.00	
600 fl., s.r.	25.00 –25.50	25.00 –26.00	
630 fl., s.r.	29.00 –29.50	29.00 –30.00	

Wax, Domestic *and* Export

(Prices in cents per lb. Tests made by A. S. T. M. methods. Melting points shown below, however, are A. M. P., 3° higher than A. S. T. M. (E. M. P.) melting points. Export prices are f.a.s. carload lots. Domestic prices are f.o.b. refineries in New York and New Orleans districts, in bags, carload lots, with 0.2c discount allowed for shipment in bulk. Scale, solid and fully refined, slabs in bags.)

Prices Effective	Aug. 9	
	New York	
	Domestic	Export
124-6 Y.C. scale	2.85 – 2.90	2.85 – 2.90
122-4 W.C. scale	2.95 – 3.00	2.95 – 3.00
124-6 W.C. scale	2.95 – 3.00	2.95 – 3.00
123-5 Fully rfd.	4.45	4.375
125-7 Fully rfd.	4.55	4.50
128-30 Fully rfd.	4.80	4.75
130-2 Fully rfd.	5.05	5.00
133-5 Fully rfd.	†5.50	5.50
135-7 Fully rfd.	†5.75	5.75
	New Orleans	
	Domestic	Export
124-6 Y.C. scale	2.85 – 2.90	2.85 – 2.90
122-4 W.C. scale	2.95 – 3.00	2.95 – 3.00
124-6 W.C. scale	2.95 – 3.00	2.95 – 3.00
123-5 Fully rfd.	4.45	4.375
125-7 Fully rfd.	4.55	4.50
128-30 Fully rfd.	4.80	4.75
130-2 Fully rfd.	5.05	5.00
133-5 Fully rfd.	†5.50	5.50

†Shipment either in bags or in bulk.

Gulf Coast

(Prices are f.o.b. ship at Gulf oil terminals representing opinions of traders, except prices specified to the contrary. Prices cover bulk shipments of 20,000 bbls. or more, unless otherwise noted.)

Prices Effective	Aug. 9	Aug. 2
For Domestic shipment:		
MOTOR GASOLINE		
59 oct. & below	*6.125	*6.125
60-64 oct. number	*6.25	*6.25
65 oct. & above	6.50 – 6.625	6.50 – 6.625
FUEL OILS		
No. 1	5.00	4.875– 5.00
No. 2	4.125	4.125
No. 4	4.00	4.00
KEROSINE		
41-43 w.w.	5.00	4.875– 5.00
For Export Shipment:		
GASOLINE		
U. S. Motor	6.125	6.125
60-62, 400 e.p.	6.125	6.125
61-63, 390 e.p.	6.25	6.25
64-66, 375 e.p.	6.375	6.375

*Nominal.

Prices Effective	Aug. 9	Aug. 2
KEROSINE		
44 w.w.	5.125	5.00 – 5.125
41-43 w.w.	5.00	4.875– 5.00
41-43 p.w.	4.875	4.875
GAS AND BUNKER OILS		
For Domestic and/or Export Shipment		
‡26-30 translucent gas oil	4.00 – 4.125	4.00 – 4.125
‡30 plus translucent gas oil	4.125– 4.25	4.125– 4.25
‡30 plus transparent gas oil	4.125– 4.25	4.125– 4.25
Diesel Oil Ship's bkrs.	†$1.90	†$1.90
Grade C bunker oil, for ship's bunkers	†$1.05	†$1.05
Grade C bunker oil, in cargoes	$0.95	$0.95

‡Less than ½ of 1% sulphur. †Barging 5c bbl. additional at some Gulf ports.

MEXICAN CRUDE AND BUNKER OILS

(F.o.b. Steamer, Tampico)

Heavy Panuco crude, taxes to be paid	*$1.15 –$1.20	*$1.20
Grade C bunker oil, ship's bunkers, taxes paid	$1.05	$1.05

MID-CONTINENT LUBRICATING OILS

(Prices in cents per gal. in bbls. f.a.s. Gulf oil terminals. In drums and new barrels, 0.5c to 1c higher per gal. in some instances.)

190-200 vis. D 210 brt. stock	27.50	27.50
150-160 vis. D 210 b.t. stock:		
0-10 p.p.	24.50	24.50
10-25 p.p.	24.00	24.00
25-40 p.p.	23.50	23.50
150-160 vis. E 210 brt. stock	23.50	23.50
120 vis. D 210 brt. stock	22.50	22.50
180 vis. No. 3 color neutral:		
0-10 p.p.	16.50	16.50
15-30 p.p.	16.00	16.00
200 vis. No. 3 color neutral:		
0-10 p.p.	17.00	17.00
15-30 p.p.	16.50	16.50
600 s.r. olive green	12.50	12.50
600 s.r. dark green	11.00	11.00
631 s.r.	22.50	22.50

SOUTH TEXAS LUBRICATING OILS

(Vis. at 100° F., pour point 0. Tanker, f.o.b. Gulf oil terminals, for export shipment.)

Unfiltered Pale Oils:

Vis. Color		
100 No. 3	5.50 – 5.75	5.50 – 5.75
200 No. 3	7.25 – 7.50	7.25 – 7.50
300 No. 3	7.75 – 8.00	7.75 – 8.00
500 No. 3½	8.50 – 8.75	8.50 – 8.75
750 No. 4	9.25 – 9.50	9.25 – 9.50
1200 No. 4	9.75 –10.00	9.75 –10.00
2000 No. 4	10.25 –10.50	10.25 –10.50

Red Oils:

Vis. Color		
100 No. 5-6	5.50 – 5.75	5.50 – 5.75
200 No. 5-6	7.25 – 7.50	7.25 – 7.50
300 No. 5-6	7.75 – 8.00	7.75 – 8.00
500 No. 5-6	8.50 – 8.75	8.50 – 8.75
750 No. 5-6	9.25 – 9.50	9.25 – 9.50
1200 No. 5-6	9.75 –10.00	9.75 –10.00
2000 No. 5-6	10.25 –10.50	10.25 –10.50

Note: Red oil prices shown above cover oils with green cast; prices for blue cast red oils are slightly lower in some cases.

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 lbs., British sterling; to U. S. ports in cents per bbl.)

Rates Effective Aug. 9

	Crude &/or Fuel		Refined Oil &/or Spirits	
	Last Paid	Owners Ask	Last Paid	Owners Ask
Gulf-U.K./Cont.‡	28/6	25/	29/6	31/-32/
Auruba-U.K./Cont.‡	21/	21/-22/	25/	25/-26/
Gulf-N. Atlantic** (not E. of N. Y.):				
Hvy. Crude & Fuel, (10 to 19.9 gravity)	*41c	41c-43c	....	....
Light Crude, (30 Grav. or Lighter)*††	37c	38c-40c	....	....
Gasoline	....	....	41c	48c
Kerosine	....	....	45c	49c
Light Fuel	....	....	46c	50c

Note: Dirty boat quotations are enlarged to cover, "Fuel and Light Crude" quotations.

*Nominal.

‡Continental ports in range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading same rate; Tampico 2c to 3c per bbl. additional.

††For 20-29.9 Gravity.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A P I. gravity. Prices are effective as of 7 a. m. of dates as given

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency

(Effective June 7, 1937, except Corning Jan. 29, 1937)

Penna. Grade Oil in Southwest Penna. Pipe Lines $2.57

Penna. Grade Oil in Eureka Pipe Lines (West Virginia) $2.52

Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) $2.37

Corning Oil in Buckeye Pipe Lines (Ohio) ... $1.42

Posted by Other Companies

Tide Water Pipe Co., Ltd.
Bradford-Allegany district (Penna. and N. Y.) (Effective June 7, 1937) $2.82

*The Pennzoil Co.: (Effective June 7, 1937)
Penna. Grade Oil in National Transit Lines *$2.82

Ashland Oil & Transportation Co.:
Somerset Oil in Ashland Lines (Ky.): (Effective Jan. 28, 1937)
Big Sandy River $1.42
Kentucky River $1.50

*The Pennzoil Co. posts $2.82 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields; prices in other lower districts range down to $2.77 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co.

Midland, Midland County (July 23, 1937) ... $1.27

Posted by Simrall Pipe Line Corp.

(Effective July 22, 1937)
West Branch, Arenac, and equal grades $1.09

(Effective July 23, 1937)
Beaverton, Crystal, Greendale, Porter and equal grades $1.27
Buckeye $1.245

(Effective July 1, 1937)
Billings and Tobacco $1.395

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

(Effective Jan. 28, 1937)

Illinois, Princeton $1.35
Lima $1.25
Owensboro (Western Ky.) $1.40

Posted by Stoll Oil Refining Co.

(Effective Feb. 1, 1937)

Stoll Pipe Line Oil (Ky.) $1.40

CANADIAN FIELDS

Posted by Imperial Oil Limited

Western Ontario

(Effective Sept. 9, 1933)

Petrolia $2.10
Oil Springs $2.17

Alberta—Turner Valley

(Prices f.o.b. field tankage)
(Effective Dec. 16, 1936)

Clear Naphtha $2.60

Crude Oil & Discolored Naphtha

40-40.9*	$1.55	53-53.9	$1.94
41-41.9	1.58	54-54.9	1.97
42-42.9	1.61	55-55.9	2.00
43-43.9	1.64	56-56.9	2.03
44-44.9	1.67	57-57.9	2.06
45-45.9	1.70	58-58.9	2.09
46-46.9	1.73	59-59.9	2.12
47-47.9	1.76	60-60.9	2.15
48-48.9	1.79	61-61.9	2.18
49-49.9	1.82	62-62.9	2.21
50-50.9	1.85	63-63.9	2.24
51-51.9	1.88	64-64.9	2.27
52-52.9	1.91	65° & higher, for discolored naphtha only	2.36

Note: Clear naphtha: 22 color; 10 lbs. vapor pressure, Reid method; 90% recovery; end point, 410°. Discolored naphtha: same specifications as for clear naphtha except color.

MID-CONTINENT

Posted by Stanolind Crude Oil Purchasing Co., Jan. 28, 1937

	(In Oklahoma-Kansas)	(In North-North Central Texas)
Below 29	$1.06	$0.96
29-29.9	1.08	0.98
30-30.9	1.10	1.00
31-31.9	1.12	1.02
32-32.9	1.14	1.04
33-33.9	1.16	1.06
34-34.9	1.18	1.08
35-35.9	1.20	1.10
36-36.9	1.22	1.12
37-37.9	1.24	1.14
38-38.9	1.26	1.16
39-39.9	1.28	1.18
40 & above	1.30	1.20

Above Stanolind prices met as follows:

Jan. 28, Continental Oil Co. met in Okla., Kans., and North Texas. Sinclair-Prairie met in North Texas and North Central Texas, Jan. 28, Stanolind's North Texas schedule. Same date, The Texas Co. met in North-North Central Texas.

Note: Stanolind prices in Okla.-Kans. are for quantities computed by 97% tank tables. In Texas, 99% tank tables are used, volume corrected to 60° F., and deduction for full b.s. & w. content.

*Effective Aug. 1, 1937, for Otis-Albert pools Rush-Barton counties, Kans., 13c less.

Posted by Carter Oil Co.

In Oklahoma

(Effective Jan. 28, 1937)

Below 25	$0.98	33-33.9	$1.16
25-25.9	1.00	34-34.9	1.18
26-26.9	1.02	35-35.9	1.20
27-27.9	1.04	36-36.9	1.22
28-28.9	1.06	37-37.9	1.24
29-29.9	1.08	38-38.9	1.26
30-30.9	1.10	39-39.9	1.28
31-31.9	1.12	40 and above	1.30
32-32.9	1.14		

Above Carter schedule met Jan. 28 by the following companies: Sinclair-Prairie, Shell and Barnsdall in Oklahoma-Kansas; Skelly Oil in Kansas; Tide Water in Oklahoma; Pure Oil in Oklahoma-Kansas, beginning with below 24 at $0.98 and ending with 40 & above at $1.30.

Posted by Magnolia Petroleum Co.

(Effective Jan. 28, 1937)

In Oklahoma, same schedule as Carter Oil, which see above, beginning with below 25, at $0.98 and ending with 40 & above, at $1.30.

In Texas: North and North Central, including Burkburnett, Archer, Henrietta, Electra, Comanche and Olden, same gravity and price schedule as Stanolind in North Texas, which see under Stanolind, beginning with below 29 at $0.96 and ending with 40 and above, at $1.20.

Posted by Humble Oil & Refining Co.

TEXAS FIELDS

(*West Central Texas)

(Effective Jan. 28, 1937)

Below 29	$0.96	35-35.9	$1.10
29-29.9	0.98	36-36.9	1.12
30-30.9	1.00	37-37.9	1.14
31-31.9	1.02	38-38.9	1.16
32-32.9	1.04	39-39.9	1.18
33-33.9	1.06	40 and above	1.20
34-34.9	1.08		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young counties.

Shell Petroleum Corp., effective Jan. 28, posts Humble's above schedule on Fisher county crude, plus these five lower grades, beginning with below 25 gravity at $0.88; 25-25.9, $0.90; 26-26.9, $0.92; 27-27.9, $0.94, and 28-28.9, $0.96; rest of schedule same as Humble's in West Central Texas.

†Effective Dec. 1, 1934, Humble prices are based on 99% tank tables at 60F. Allowance or deduction of 1% is made for each 25° change in temperature above or below 60F.

*East Central Texas

(Effective Jan. 28, 1937)

Below 29	$1.03	35-35.9	$1.17
29-29.9	1.05	36-36.9	1.19
30-30.9	1.07	37-37.9	1.21
31-31.9	1.09	38-38.9	1.23
32-32.9	1.11	39-39.9	1.25
33-33.9	1.13	40 and above	1.27
34-34.9	1.15		

*Including Anderson, Cherokee, Limestone, Navarro counties.

Same date, Sinclair-Prairie met in Mexia Humble's above schedule.

PANHANDLE TEXAS

Posted by Humble Oil & Refining Co.

(Effective Jan. 28, 1937)

	Gray County	Carson-Hutchinson
Below 35	$0.96	$0.91
35-35.9	0.98	0.93
36-36.9	1.00	0.95
37-37.9	1.02	0.97
38-38.9	1.04	0.99
39-39.9	1.06	1.01
40 & above	1.08	1.03

Jan. 28, above prices met by Sinclair-Prairie and Magnolia in the entire area and by Continental in Carson-Hutchinson and by Texas Co. in Panhandle Sweet, same as Humble's Gray Co. and on Panhandle Sour, same as Carson-Hutchinson.

EAST TEXAS

(Effective May 22, 1937)

Stanolind, Humble, Shell, Sinclair-Prairie, Texas Co., and Magnolia $1.35

Shell also posted on Jan. 28, in Livingston area, Polk County, Texas, $1.27.

NORTHEAST TEXAS

(Posted by Humble, Jan. 28, 1937)

Talco $0.73

(Posted by Magnolia, Jan. 28, 1937)

Cass County and Panola County, Tex:
Same gravity and price schedule as S. O. Louisiana posts for Rodessa, La., which see under that company.

(*Posted by The Texas Co., Jan. 28, 1937*)

Cass County $1.25

WEST TEXAS AND NEW MEXICO

Posted by Humble Oil & Refining Co

(Effective Jan. 28, 1937)

(Including Andrews, Crane, Crockett, Ector, Glasscock, Howard, Winkler and Upton Counties, Texas and Lea county, New Mexico).

Below 26	$0.78	33-33.9	$0.94
26-26.9	0.80	34-34.9	0.96
27-27.9	0.82	35-35.9	0.98
28-28.9	0.84	36-36.9	1.00
29-29.9	0.86	37-37.9	1.02
30-30.9	0.88	38-38.9	1.04
31-31.9	0.90	39-39.9	1.06
32-32.9	0.92	40 & above	1.08
Pecos, West Texas			$0.91

Jan. 28, Magnolia met Humble in Crane, Upton, Howard, Glasscock, Mitchell and Winker.

Shell Petroleum Corp., on Jan. 28, met Humble in Crane, Glasscock, Howard, Pecos (except Yates shallow pool), Winkler, and Upton counties, Tex., and in Lea County, N. Mex. On Jan. 28, Shell posted in Yates shallow pool in Pecos county, Tex., $0.81. June 4, 1937, Shell added Ector county to West Texas postings.

Jan. 28, Stanolind Oil & Gas Co. met Humble in Hendrick field, Winkler county.

Jan. 28, Texas Co. met Humble in Ward and Winkler counties, Tex., and Lea County, N. M.

April 20, 1937, Sinclair Prairie met Humble in Ward and Winkler, Tex. and Lea, N. M., counties, except that its gravity schedule ends with 36 and above, at $1.00.

Posted by Continental Oil Co.

(Effective Jan. 28, 1937)

Artesia, Jackson and Maljamar pools, N. M. .. $0.90

COLORADO

(Posted by Continental Oil Co., Effective Jan. 28, 1937)

Ft. Collins and Wellington

Below 29	$1.01	35-35.9	$1.15
29-29.9	1.03	36-36.9	1.17
30-30.9	1.05	37-37.9	1.19
31-31.9	1.07	38-38.9	1.21
32-32.9	1.09	39-39.9	1.23
33-33.9	1.11	40 & above	1.25
34-34.9	1.13		
Cannon City and Florence, Col.			$1.10

SOUTH AND SOUTHWEST TEXAS

Posted by Humble Oil & Refining Co.

(Effective Jan. 28, 1937)

Carroll, Clark, Darst Creek, Hilbig, Salt Flat and Zoboroski fields $1.09

Pettus	$1.37	Van Zandt	$1.10

(Effective Nov. 1, 1936)

Heyser heavy	$0.90	Placedo heavy	$0.90
Heyser light	1.15	Taft	0.95

Shell Pet. Corp. on Jan. 28, posted $1.09 in Salt Flat district, Tex.

Anahuac, Dickinson, Flour Bluff and Turtlebay

(Effective Jan. 28, 1937)

Below 31	$1.16	36-36.9	$1.28
31-31.9	1.18	37-37.9	1.30
32-32.9	1.20	38-38.9	1.32
33-33.9	1.22	39-39.9	1.34
34-34.9	1.24	40 and above	1.36
35-35.9	1.26		

Jan. 28, Magnolia met Humble in Darst Creek; posted $1.00 in Luling; $1.12 in Lytton Springs; $1.27 for Cleveland, Liberty county, Tex.; $1.15 in Hardin, Liberty county, Tex.

Jan. 28, 1937, The Texas Co. met Humble in Darst Creek.

Posted by Humble

Conroe, Raccoon Bend, Tomball and Satsuma
(Deep sand crudes)
(Effective Jan. 28, 1937)

Below 29	$1.20	35-35.9	$1.34
29-29.9	1.22	36-36.9	1.36
30-30.9	1.24	37-37.9	1.38
31-31.9	1.26	38-38.9	1.40
32-32.9	1.28	39-39.9	1.42
33-33.9	1.30	40 & above	1.44
34-34.9	1.32		

Jan. 28, Magnolia met Humble in Tomball and Texas Co. met Humble in Conroe, beginning with 35-35.9 gravity.

Posted by Humble

Mirando, Heavy and Light
(Effective July 6, 1937)

Below 21	$0.96	31-31.9	$1.18
21-21.9	0.98	32-32.9	1.20
22-22.9	1.00	33-33.9	1.22
23-23.9	1.02	34-34.9	1.24
24-24.9	1.04	35-35.9	1.26
25-25.9	1.06	36-36.9	1.28
26-26.9	1.08	37-37.9	1.30
27-27.9	1.10	38-38.9	1.32
28-28.9	1.12	39-39.9	1.34
29-29.9	1.14	40 & above	1.36
30-30.9	1.16		

July 6, Magnolia posted same schedule as Humble in Mirando.

July 6, 1937, Texas Co. posted for Duval-Mirando, $0.96 for below 21, plus 2c differential, to $1.12 for 28 & above.

(*Continued on next page*)

CRUDE OIL MARKETS

(Continued from preceding page)

NORTH LOUISIANA-ARKANSAS

Posted by Standard Oil Co. of Louisiana

(Effective Jan. 28, 1937)

(In Caddo, Homer, Haynesville, Sabine, De Soto, Sarepta, Carterville, El Dorado, Bunkie, and Miller county).

Below 25	$0.90	33-33.9	$1.08
25-25.9	0.92	34-34.9	1.10
26-26.9	0.94	35-35.9	1.12
27-27.9	0.96	36-36.9	1.14
28-28.9	0.98	37-37.9	1.16
29-29.9	1.00	38-38.9	1.18
30-30.9	1.02	39-39.9	1.20
31-31.9	1.04	40 and above	1.22
32-32.9	1.06		

Rodessa, La.

(Effective Jan. 28, 1937)

Below 25	$0.93	33-33.9	$1.11
25-25.9	0.95	34-34.9	1.13
26-26.9	0.97	35-35.9	1.15
27-27.9	0.99	36-36.9	1.17
28-28.9	1.01	37-37.9	1.19
29-29.9	1.03	38-38.9	1.21
30-30.9	1.05	39-39.9	1.23
31-31.9	1.07	40 and above	1.25
32-32.9	1.09		

Choctaw and Darrow

Jan. 28, 1937, initial posting; same schedule as Humble posts in Mirando, Tex., which see.

Smackover, Ark. $0.90
Urania, La. (La. Oil Refg. Co., Jan. 10, '36) ... 0.97
Tepetate, La. (Continental Oil, Jan. 28, '37) ... 1.24

Jan. 28, 1937, Magnolia met S. O. La.'s No. La.-Ark. gravity and price schedule in Pine Island, Haynesville, Bull Bayou and Cotton Valley, La., and in Eldorado and Rainbow districts, Ark.; and met S. O. La.'s Rodessa prices; and in Lockport, Iowa, Cameron Meadow, La., posted Humble's gravity and price schedule on Mirando.

Jan. 28, The Texas Co. met S. O. La. in N. La., except that its gravity schedule begins with below 27 at $0.94. It posted $1.37 for Garden Island, La., $1.24 for LaFitte, La. and $0.90 for Smackover.

*GULF COASTAL FIELDS

Posted by Humble Oil & Refining Co. and The Texas Co.

	(Effective Jan. 28, 1937) Humble	Texas	Saxet (Humble) (July 6 '37)
Below 18	$0.95	$0.90	....
18-18.9	for	0.92	....
19-19.9	below	0.94	....
20-20.9	21°	0.96	$1.01
21-21.9	0.98	0.98	1.03
22-22.9	1.01	1.01	1.05
23-23.9	1.04	1.04	1.07
24-24.9	1.07	1.07	1.09
25-25.9	1.10	1.10	1.11
26-26.9	1.13	1.13	1.13
27-27.9	1.15	1.15	1.15
28-28.9	1.17	1.17	1.17
29-29.9	1.19	1.19	1.19
30-30.9	1.21	1.21	1.21
31-31.9	1.23	1.23	1.23
32-32.9	1.25	1.25	1.25
33-33.9	1.27	1.27	1.27
34-34.9	1.29	1.29	1.29
35-35.9	1.31	for	1.31
36-36.9	1.33	oil	1.33
37-37.9	1.35	34°	1.35
38-38.9	1.37	and	1.37
39-39.9	1.39	above.	1.39
40 and above	1.41	....	1.41

Effective Dec. 1, 1934, Humble prices are based on 99% tank tables at 60F. Allowance or deduction of 1% is made for each 25° change in temperature above or below 60F.

*Includes these fields: Barbers Hill, Goose Creek, Hull, Humble, Liberty, Moss Bluff, Mykawa, Orange, Pierce Junction, Plymouth, Rabbs Ridge, Raccoon Bend (shallow sand), Refugio light and †heavy, Sour Lake, Spindletop, Sugarland and West Columbia. †Except these grades of Refugio heavy: effective July 6, 1937: Below 20, $0.95; 20-20.9, $1.01; 21-21.9, $1.03; 22-22.9, $1.05; 23-23.9, $1.07; 24-24.9, $1.09; and 25-25.9, $1.11; rest of schedule same as other Gulf Coastal crude.

Jan. 28, Sinclair-Prairie met above Humble schedule in full.

July 6, 1937, The Texas Co. posted for Refugio: $1.01 for below 21, plus 2c differential, to $1.17 for 28 & above.

ROCKY MOUNTAIN FIELDS

Posted by Stanolind Oil & Gas Co.

(Effective Jan. 28, 1937)

Salt Creek, Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma, Kansas which see under Mid-Continent crude on previous page.

Greybull-Torchlight	$1.30
Iles, light, Col.	1.18
Iles, heavy	1.12
Hogback, N. M.	1.33
Big Muddy	1.23
Elk Basin, light	1.30
Grass Creek, light	1.30
Frannie light	0.82

(Effective Nov. 4, 1936)

Grass Creek, heavy	$0.62
Frannie heavy	0.62
Hamilton Dome, Wyo.	0.57

Pondera, Mont., (Postings discontinued July 1, 1936, but Stanolind pays price posted by Ohio Oil for Kevin-Sunburst, less 20c per bbl.)

Posted by Ohio Oil Co.

(Effective Jan. 28, 1937)

Elk Basin, Wyo.	$1.30
Grass Creek, light	1.30
Rock Creek	1.205
Lance Creek	0.97
Sunburst, Mont.	1.20

*Posted by *International Refg. Co.*

Cut Bank, Mont.

(Effective Jan. 28, 1937)

Below 35°	$1.34	38-38.9	$1.42
35-35.9	1.36	39-39.9	1.44
36-36.9	1.38	40 and above	1.46
37-37.9	1.40		

*Texas Co. subsidiary.

Posted by Continental Oil Co.

(Effective Jan. 28, 1937)

Cat Creek, Mont.	$1.40
Big Muddy, Wyo.	1.18
Lance Creek, Wyo.	0.97

CALIFORNIA, *Posted by Standard Oil of California*

All gravities above those quoted take highest price offered in the field. Prices effective Feb. 26, 1986, except Huntington Beach, Playa del Rey, Santa Fe Springs, Kern Front, Signal Hill (Long Beach) effective March 7, 1936, and Elk Hills, effective June 22, 1936

Gravity	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda Brea Canon	Athens Rosecrans	Dominguez	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	‡Newhall and others	Mountain View	Elk Hills	Buena Vista Hills **Midway-Sunset	Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$0.80	0.79	0.74	0.78	0.79	0.80	0.76	....	....	0 80	0 76	0.76	0 77	0 78	....	0.70	....	0 70	0.70	0.65	0.70	0.70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	80	76	76	77	78	....	.70	....	.70	.70	.65	.70	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	80	76	76	77	78	....	.70	....	.70	.70	.65	.70	.70	....
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	80	76	76	77	78	....	.70	....	.70	.70	.65	.70	.70	....
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	82	76	76	77	78	....	.70	....	.70	.70	.65	.70	.70	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	85	76	78	77	78	....	.70	.70	.74	.74	.66	.74	.71	.70
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	88	78	82	77	80	....	....	.70	.78	.78	.68	.78	.72	.70
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	91	80	85	77	84	.78	....	.73	.82	.82	.71	.82	.74	.70
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	93	84	89	79	88	.78	....	.77	.87	.87	.74	.86	.78	.72
23-23.9	.95	.86	.77	.96	.99	1.02	.96	.84	.79	.96	.88	.93	.82	.92	.78	....	.80	.92	.92	.77	.90	.82	.76
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	.99	.91	.96	.85	.96	.82	....	.84	.97	.97	.80	.94	.86	.79
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	1.02	.95	....	.89	.99	.86	....	.88	1.01	1.01	.83	.98	.90	.83
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	1.05	.98	....	.92	1.03	.90	....	.91	1.06	1.06	.86	1.02	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	1.02	....	.96	1.06	.95	....	.95	1.10	1.10	.88	1.06	....	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	1.06	....	.99	1.10	.99	....	99	1.15	1.15	.91	1.10	....	....
29-29.9	1.17	1.15	.93	1.18	1.18		1.17	1.12	.93	....	1.09	....	1.03	1.14	1.03	....	1.02	1.20	1.20	.94	1.14	....	....
30-30.9	1.21	1.19	.95	1.22	1.21		1.21	1.17	.95	....	....	....	1.07	1.17	1.08	....	1 06	1.25	1.25	.97	1.18	....	....
31-31.9					1.24		1.24	1.22	.97	....	....	....	1.11	1.21	1.12	....	1.09	1.29	1.29	.99			
32-32.9	*Elwood Terrace				1.27		1.27	1.27	1.00	....	....	....	1.14	1 25	1.16	....	1.13	1.34	1.34	1.02	Kettleman Hills		
33-33.9	....	1.28	....	....	....		....	1.32	....	....	....	....	1.18	1.28	1.20	....	1.17	1.38	1.38	1.04	....	1.19	....
34-34.9	....	1.32	....	....	....		....	1.37	....	....	....	....	1.22	1.32	1.25	....	1.20	....	....	....	....	1.23	....
35-35.9	....	1.35	....	....	....		....	1.42	....	....	....	....	1.25	....	1.29	....	....	....	....	....	....	1.27	....
36-36.9	....	1.39	....	....	....		....	1.46	....	....	....	....	1.29	....	1.33	....	....	....	....	....	....	1.31	....
37-37.9	....	1.43	....	....	....		....	1.51	....	....	....	....	1.32	....	1.37	....	....	....	....	....	....	1.35	....
38-38.9	....	....	....	....	....		....	1.56	....	....	....	....	1.36	....	1.42	....	....	....	....	....	....	1.39	....
39-39.9	....	....	....	....	....		..	1.61	....	....	....	....	1.40	....	....	....	....	....	....	....	....	1.43	....
40-40.9	....	....	....	....	....		....	1.66	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

F.O.B. Standard Pipe Line

*F. o. b. ship.
‡Also McKittrick, Kern River, Kern Front and Round Mountain $0.70 thru 19.9 gravity; no higher gravity quoted. **Except Lakeview Area.

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High Spots Of Next Week's Meetings

The American Society of Mechanical Engineers and the School of Engineering, Pennsylvania State College, 10th National Oil and Gas Power Division, Nittany Lion Inn, State College, Pa., Aug. 18 to 21.

Aug. 19, 9:30 A.M.: Fuels and Lubricants Session

"Lubrication Problems in Connection with High-Speed Diesel Engines," by C. G. A. Rosen, Caterpillar Tractor Co., Peoria, Ill.

"Correlation of Laboratory Tests on Fuel Oils with Field Operation," by W. F. Joachim, U. S. Naval Experiment Station.

2 P.M.: Transportation Session

"Recent Developments in Automotive-Type Diesel Engines," by O. D. Treiber, Hercules Motors Corp.

Aug. 20, 9:30 A.M.: Operating Session

"1936 *Oil Engine Power Cost Report,"* by H. C. Major, Chairman, Oil Engine Power Cost Sub-Committee.

"Penn State Method of Testing Diesel Fuels," by J. S. Chandler, Pennsylvania State College.

Aug. 21, 9:30 A.M.: Research Session

"Oil Flow Through Fuel Nozzles," by Prof. K. J. DeJuhasz, Penn State College.

"Polymerization of Fuel Oils," by Gustav Egloff, Universal Oil Products Co., Chicago.

Coming Meetings

General Expositions

The Greater Texas and Pan American Exposition, Dallas, June 12 to Oct. 31.

The Great Lakes Exposition, Lake Front, Cleveland, Ohio, May 29 to Sept. 6.

Oil Meetings—Expositions

American Society of Mechanical Engineers, National Oil and Gas Power meeting, Penna. State College, State College, Pa., Aug. 18 to 21.

American Chemical Society, Rochester, N. Y., Sept. 6 to 10.

Kentucky Petroleum Marketers Assn., Annual Fall Conference and Golf Tournament, Louisville, Sept. 7 and 8.

Third Annual Bituminous Conference, Glacier National Park, Mont., Sept. 7, 8 and 9.

West Virginia Oil & Natural Gas Assn., convention, Charleston, W. Va., Sept. 8 and 9.

North American Gasoline Tax Conference, San Francisco, Calif., Sept. 13 to 16.

National Petroleum Assn., annual meeting, Hotel Traymore, Atlantic City, N. J., Sept. 15, 16 and 17.

Society of Automotive Engineers, regional tractor meeting, Mayflower Hotel, Akron, Ohio, Sept. 15, 16 and 17.

Pacific Oil Show and Black Gold Festival, Taft, Calif., Sept. 16 to 19.

Gasoline Pump Manufacturers Assn., Edgewater Beach Hotel, Chicago, Sept. 21, 22.

Oil Trades Assn. of New York, Sports Outing, Pelham Country Club, Pelham Manor, N. Y., Sept. 21.

American Society of Mechanical Engineers, Erie, Pa., Sept. 22, 23 and 24.

Michigan Petroleum Association, fall convention, Traverse City, Mich., Sept. 23 and 24.

National Assn. of Petroleum Retailers, fifth national convention, Powers Hotel and Exposition Park, Rochester, N. Y., Sept. 27 to Oct. 1.

American Gas Assn., 19th annual convention, Cleveland, Ohio, Sept. 27 to Oct. 1.

Society of Automotive Engineers, regional transportation meeting, Blackstone Hotel, Chicago, Ill., Sept. 29, 30 and Oct. 1.

Society of Automotive Engineers, Fuel and Lubricants Regional meeting, Mayo Hotel, Tulsa, Okla., Sept. 30 and Oct. 1.

Chicago Exposition of Power and Mechanical Engineering, New International Amphitheatre, Chicago, Ill., Oct. 4 to 9.

Ohio Petroleum Marketers Assn., fall conference, Hotel Carter, and golf tournament, Westwood Country Club, Cleveland, Oct. 6 and 7.

Society of Automotive Engineers, National Aircraft Production meeting, Ambassador Hotel, Los Angeles, Calif., Oct. 7, 8 and 9.

26th National Safety Congress and Exposition, Kansas City, Mo., Oct. 11 to 15.

National Oil Marketers Assn., Stevens Hotel, Chicago, Ill., Oct. 12, 13 and 14.

Oil-World Exposition, Inc., Houston, Texas, Oct. 11 to 16.

25th Annual Conference on Taxation, auspices New England State Tax Officials Association, Hanover, N. H., Oct. 15 and 16.

Independent Petroleum Assn. of America, Houston, Texas, Oct. 14, 15 and 16.

American Assn. of Petroleum Geologists, midyear meeting, William Penn Hotel, Pittsburgh, Pa., Oct. 14, 15 and 16.

American Institute of Mining and Metallurgical Engineers, Atlantic City, N. J., Oct. 18 to 23.

National Tax Assn., 30th annual conference, The Lord Baltimore Hotel, Baltimore, Md., Oct. 25 to 28.

Indiana Independent Petroleum Assn., annual convention, Hotel Severin, Indianapolis, Oct. 27, 28.

Society of Automotive Engineers, annual dinner, Commodore Hotel, New York City, Oct. 28.

Mid-Continent Oil & Gas Assn. of Texas, annual meeting and convention, Dallas, Texas, Oct. 29 and 30.

National Automobile Show, Grand Central Palace, New York City, Oct. 27 to Nov. 3.

American Petroleum Institute, 18th annual meeting, Stevens Hotel, Chicago, Ill., Nov. 8 to 12.

Oil Trades Assn. of New York, New York, Nov. 16.

National Asphalt Conference, Memphis, Tenn., week of Dec. 6.

Exposition of Chemical Industries, Grand Central Palace, New York, N. Y., Dec. 6 to 11.

Society of Automotive Engineers, National Production meeting, Hotel Durant, Flint, Mich., Dec. 8, 9 and 10.

Nebraska Petroleum Marketers, Inc., Omaha, Nebr., Dec. 7, 8 and 9.

American Chemical Society, Division Organic Chemistry, Richmond, Va., Dec. 28, 29 and 30.

1938

American Assn. of Petroleum Geologists, 23rd annual meeting, Roosevelt Hotel, New Orleans, La., March 16 to 18.

International Petroleum Exposition, Tulsa, Okla., May 14 to 21.

Convention Dates Set

MINNEAPOLIS, Aug. 9.—Convention dates for the Northwest Petroleum Assn. meetings have been announced. The North Dakota Division will meet Jan. 24 and 25 at Minot. The Minnesota Division will meet Jan. 27 and 28 at the Radisson Hotel, Minneapolis.

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NATIONAL PETROLEUM NEWS

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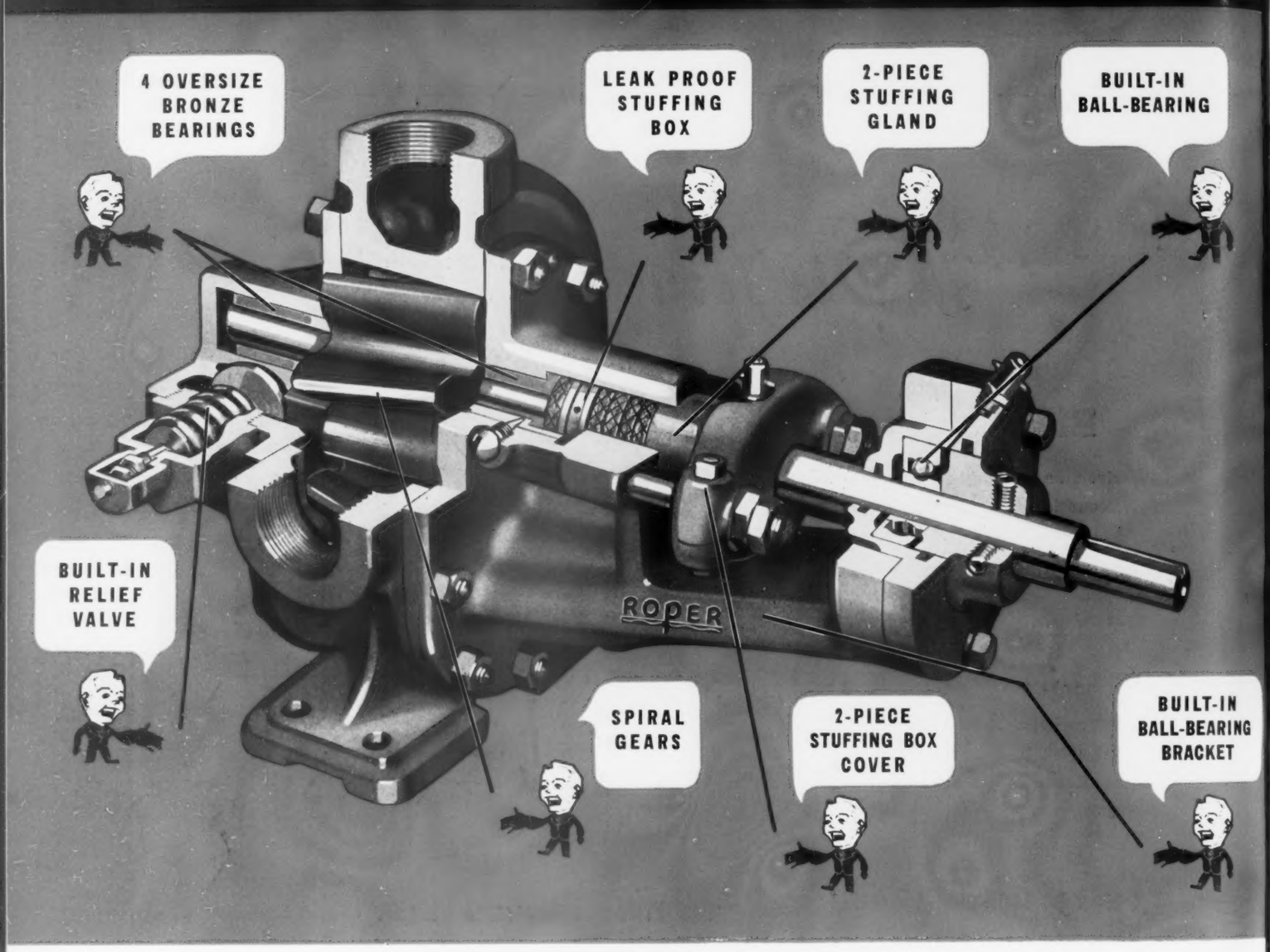
A NEW TRUCK PUMP



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RALPH W. GALLAGHER

Ralph W. Gallagher, vice-president of the Standard Oil Co. (New Jersey), succeeding the late Chester O. Swain.

He has spent 41 years with the Standard and its subsidiaries. In 1933 he was made a director in charge of the company's natural gas interests, going to that position from the presidency of the East Ohio Gas Co., Cleveland, which he had headed for seven years.

His business career began with the New York Transit Co. in 1896, while still in high school. He was transferred to the National Transit Co. and in 1900 became shop foreman for the East Ohio company at Akron, O. In 1908 he was made superintendent of the latter's Cleveland plant, then successively a director, vice-president, general manager and president. Mr. Gallagher was president of the American Gas Assn. in 1923.